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THESIS

MITIGATING THE INEQUITY OF THE MILITARY RETIREMENT SYSTEM BY CHANGING THE RULES GOVERNING INDIVIDUAL RETIREMENT ACCOUNTS FOR SERVICE MEMBERS

by

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This thesis provides a summary of the military retirement system's history, structure, and purpose, demonstrating that its all-or-nothing structure is unfair to the majority of service members. It reviews the structure of Individual Retirement Accounts and the Employee Retirement Income Security Act, which governs private-sector retirement plans and their treatment by the Internal Revenue Code. It demonstrates that the inequity of the military retirement system is compounded by the fact that although the system does not comply with the minimum standards required of private-sector retirement plans, it is treated identically in determining whether the employee is eligible to deduct his IRA contributions from taxes. The thesis reviews the extensive economic literature on the IRAs' effectiveness in increasing private saving and concludes that IRAs do lead to additional saving. The thesis proposes allowing all service members to deduct their IRA contributions from taxes regardless of income, and estimates the effect of doing so on government debt and national savings. It concludes that the cost is so small -- at most $30 million annually -- that cost is no obstacle to the proposal.

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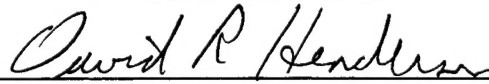
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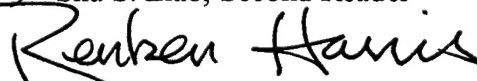
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This thesis provides a summary of the military retirement system's history, structure, and purpose, demonstrating that its all-or-nothing structure is unfair to the majority of service members. It reviews the structure of Individual Retirement Accounts and the Employee Income Retirement Security Act, which governs private-sector retirement plans and their treatment by the Internal Revenue Code. It demonstrates that the inequity of the military retirement system is compounded by the fact that although the system does not comply with the minimum standards required of private-sector retirement plans, it is treated identically in determining whether the employee is eligible to deduct his IRA contributions from taxes. The thesis reviews the extensive economic literature on the IRAs' effectiveness in increasing private saving and concludes that IRAs do lead to additional saving. The thesis proposes allowing all service members to deduct their IRA contributions from taxes regardless of income, and estimates the effect of doing so on government debt and national savings. It concludes that the cost is so small -- at most $30 million annually -- that cost is no obstacle to the proposal.

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I. INTRODUCTION

A. BACKGROUND

Most people who serve in the armed forces never qualify for military retirement because only 18 percent of all personnel who enter active duty complete the 20 years of service required for retirement eligibility. For the past five decades military personal experts, service members, compensation policy specialists, legislators, and some Defense Department officials have criticized the military retirement system for its generosity to a small percentage of personnel at the expense of the majority of service members.

Numerous studies of the retirement system have generated many proposals for reforming military retirement. However, a lack of consensus on what is the most appropriate solution have stymied efforts for reform. In the last eleven years, marginal changes have been implemented to reduce the cost of the system but structural reform has not been attempted.

The Internal Revenue Code treatment of military retirement compounds the unfairness inherent in the system itself. Civilian employers who provide a qualified retirement plan for their employees can deduct any funds they contribute to the plan from corporate earnings and employees do not have to pay taxes on the retirement benefits until they actually receive them many years later. In the eyes of the IRS, a retirement system such as this amounts to a tax-deferred retirement-savings plan for the recipient. Because a covered employee receives one such opportunity through the employer's plan, the Internal Revenue Code restricts his access to another form of tax-deferred retirement savings: the Individual Retirement Account (IRAs). Workers with an employer-sponsored retirement plan whose income exceeds certain thresholds can contribute to IRAs, but they cannot deduct their contributions from current earnings. Workers not covered by an employer's plan can deduct their contributions regardless of their income.

Federal law requires an employer-sponsored retirement plan to meet minimum vesting, coverage, funding, and reporting criteria to qualify for favorable tax treatment. Plans that meet the criteria get to defer taxes on the plan's assets, and the employees are not automatically qualified to deduct their IRA contributions. Employees whose plans do not meet the criteria, or who have no retirement plan at all, are eligible to deduct their IRA contributions.

The IRS treats military retirement as if it were a qualified retirement plan under the law, even though it does not meet the vesting, funding, and reporting criteria. In fact, the feature of military retirement that is most frequently criticized as inequitable, the delay of vesting until 20 years-of-service, is exactly what the law governing private-sector retirement plans was designed to prevent. Thus, the majority of military personnel are denied the opportunity for tax-deferred retirement saving available to all other American citizens.

B.   THE PROPOSAL

In this thesis, the author examines the issue of fairnes to service members and the potential impact of ammending the Internal Revene Code to allow all military personnel to deduct their contributions from taxable income, regardless of how much money they earn. Doing so will mitigate the unfairness caused by treating service members as if they have a retirement plan when in fact they are unlikely to receive any retirement benefits from the military. This thesis examines the merits of the proposal.

C.   CHAPTER OUTLINE

Chapter II presents an overview of the military retirement system. It discusses the origins, purpose and structure of the system. It describes the flaws of the system, reviews past proposals for change, and details the reasons these proposals failed to materially reform military retirement. Finally, it discusses some current proposals for reconfiguring the system and details the legislative, bureaucratic, and political obstacles that make systemic reform unlikely.

Chapter III describes Individual Retirement Accounts and reviews their legislative history. It summarizes the provisions of the Employee Retirement Income Security Act that established the criteria that employer-sponsored retirement plans must meet to qualify for tax-favored treatment, and points out how the military retirement system fails to meet these criteria. It argues that military personnel should be allowed to deduct their IRA contributions as a matter of equity.

Chapter IV reviews the economic literature on IRAs, focusing in particular on the issue of whether IRAs effectively encourage people to save more money. It argues that reducing the disincentive to saving caused by high marginal tax rates and taxation of nominal gains effectively increases private saving rates. By reducing the disincentive to save, IRA contribution deductibility will increase saving among service members.

Chapter V quantifies the cost of the proposal by estimating the annual personal income tax revenue loss caused by extending IRA contribution deductibility to service members who are now ineligible to do so. It also examines the long-term impact on total tax revenues by examining the positive tax revenue effects of the withdrawal of IRA assets during retirement, and increased corporate income tax revenues which are stimulated by increased saving.

Chapter VI summarizes the author's findings and reviews the reasons why all military personnel should be allowed to deduct their IRA contributions from taxable income.

II.   OVERVIEW OF THE MILITARY RETIREMENT SYSTEM

A.   INTRODUCTION

This chapter gives an overview of military retirement that will lay the foundation for further evaluation of the equity of the system, and for discussion of a proposal for change. This profile is not an all encompassing review of the entire system. Instead, it examines some topics that are relevant to the issues addressed in subsequent chapters. First the chapter describes the essential elements of the current system, such as the benefits formulas, eligibility requirements, and budgeting and funding methods. Next it outlines some of the historical developments that resulted in the current system. This historical synopsis also lays the foundation for subsequent conclusions concerning the prospects for changing the system. A discussion of the purpose of military retirement follows. This section provides information necessary to evaluate the effectiveness of the system as well as the efficacy of proposals to change the system. A summary of the major plans for change follows, and the chapter concludes with an evaluation of their chances for success in the present environment.

B.   SUMMARY OF THE MILITARY RETIREMENT SYSTEM

The Department of Defense (DoD) retirement program is a funded, noncontributory, defined-benefit plan that includes nondisability retired pay, disability retired pay, retired pay for reserve service, and survivor annuity. It provides an immediate lifetime annuity with cost of living adjustments (COLA) to retiring service members who have 20 or more years of service (YOS), regardless of age. Vesting, the point at which service members become entitled to receive retirement benefits, occurs at 20 YOS. Eligibility, the point at which service members can claim and receive benefits under the plan, occurs simultaneously. Service members who separate from the military

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prior to 20 YOS receive no retirement benefits, regardless of whether their separation was voluntary or involuntary. An exception to this policy is discussed in a subsequent section.

1. Benefits Formulas

Under a defined-benefits plan, an employer promises to provide an annuity of a specified amount to the employee once he becomes eligible to receive it. The amount of a military retiree's annuity is a function of his years of service and basic pay. Changes to the benefit formula and cost of living adjustment in 1980 and 1986, affecting new entrants only, resulted in three versions of nondisability retirement. These three versions, called Final Pay, High-3, and REDUX, are described below.

a. *Final Pay*

The retirement annuity of personnel who first became members of the Armed Services prior to 8 September, 1980 is computed as a percentage of final basic pay. The formula for the annuity is (.025*YOS*final basic pay.) The annuity is 50 percent of final basic pay at 20 YOS and increases to a maximum of 75 percent of final basic pay for 30 YOS. The annuity is adjusted annually by the percentage change in the Consumer Price Index.[1] This is known as full CPI protection. (DoD Actuary, 1996, p. 1.)

b. *High-3*

The retirement annuity for personnel who first became members of the Armed Services on or after 8 September 1980 is computed as a percentage of the annual average of their highest three years of basic pay. This version is known as "High-3." The formula for the annuity is (.025*YOS* High-3 average basic pay.) The annuity is 50 percent of the average of the highest three years of basic pay at 20 YOS and increases to a

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1 Annual CPI adjustments to retired pay are effective on 1 December of the fiscal year. As part of the Omnibus Budget Reconciliation Act of 1993, Congress voted to delay the effective date of the adjustments for fiscal years 1994 to 1997. The effective date was delayed until March of the fiscal year for FY 1994, 1995, and 1996. The increase for FY 1997 is effective in September 1998.

maximum of 75 percent of this average for 30 YOS. High-3 also includes full CPI protection of the annuity. This change to the benefit formula, included as part of the Defense Authorization Act of 1981, was implemented to reduce the cost of the military retired pay. (DoD, OSD, 1991, p. 460.)

c.   REDUX

The REDUX version was adopted as part of the Military Retirement Reform Act of 1986 and introduced a two-tier system to military retirement. The retirement annuity for personnel who first became members of the Armed Services on or after 1 August 1986 is also computed as a percentage of the annual average of their highest three years of basic pay. The Act modified the formula to levy a penalty on service members who retire prior to 30 YOS. Under the REDUX formula, retirees receive 2 percent of their high-3 average basic pay for each year of service up to 20 years, then receive 3.5 percent for each year thereafter, up to 30 YOS. The formula is $[.4+.035*(YOS-20)]$. Retirees receive 40 percent of their high-3 average basic pay at 20 YOS, increasing to 75 percent of this base at 30 YOS. The annuity is only partially protected against inflation. The cost of living adjustment is reduced by one percentage point below the percentage change in the CPI. (Asch and Warner, 1994a, p. 4.)

This system is two-tiered because it creates one level of benefits in the second-career phase of military retirement and another level in the old age phase. The penalty is in effect until the retiree reaches 62 years of age, at which point the penalty for retiring prior to 30 YOS is eliminated and the annuity is recomputed as ($.025*YOS*$High-3 average basic pay.) There is also a one-time restoral of the COLA. The annuity is indexed as if full CPI protection had been in effect over the intervening years, but after this restoral, COLAs continue at the CPI minus one percentage point.

The purpose of this change was two-fold. First, it further reduced the cost of retirement pay by lowering the annuity in the second-career phase. Second, it provided a strong incentive for personnel to remain on active duty once they reach retirement

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eligibility at 20 YOS. REDUX gives a greater marginal benefit for each additional year of service past 20 because the amount of the annuity increases 40 percent more rapidly under REDUX than under the High-3 or Final Pay formulas.

2.   Temporary Voluntary Separations Programs

The post-Cold War drawdown led to an exception to the 20 YOS vesting and eligibility rule. Congress authorized the Department of Defense to use two voluntary separation programs in 1991 and a third program in 1993, to reduce the size of the active duty force.

The Voluntary Separation Incentives (VSI) program allows the services to provide an annuity to eligible service members who volunteer to leave active duty. The VSI annuity is paid for twice the number of years of service completed by the member and is a function of the final month of basic pay and years of service. The VSI annuity is calculated by multiplying the final month of basic pay by the years of service times 2.5 percent. The Special Separations Benefit (SSB) provides a lump-sum payment to eligible service members volunteering to leave active duty. The one-time payment is calculated as 15 percent of the final month of basic pay multiplied by 12, then multiplied by the years of service. (GAO, 1996.)

Temporary Early Retirement Authority (TERA) was granted as part of the Defense Authorization Act of 1993. This authority gives the services the discretion to retire personnel in certain occupational specialties provided they have at least 15 YOS. Personnel who retire under TERA have their annuity reduced by 2.5 percent for each year of service below 20 years. This reduction can be restored in whole or in part at age 62 if the retiree works in a qualified public sector service job until the year when they would have been eligible for normal retirement from active duty. The authority for all three voluntary separations programs expires in 1999. (DoD Actuary, 1995.)

3. Military Retirement Fund

The Defense Authorization Act of 1984 significantly altered the method of funding and budgeting for military retirement. It established the Department of Defense Military Retirement Fund, changed the pay-as-you-go system to an accrual-based accounting and budgeting system, and organized the DoD Board of Actuaries (GAO, 1997.) Prior to the change, the annual obligation for current retiree annuities was funded from an annual DoD appropriation. The Act required the Secretary of Defense to allocate a percentage of annual military basic pay costs to the Fund to meet future retirement obligations for current service members. This step brought DoD into compliance with provisions of the Employee Income Retirement Security Act (ERISA) of 1974 which stipulate that pension plans must be fully funded.

The switch to accrual accounting was significant for several reasons. The adoption of accrual accounting introduced the concept of the normal cost (also known as the retirement accrual charge) to the military retirement system. The normal cost is the level percentage of pay that must be contributed throughout the employee's work tenure to cover the cost of the lifetime pension benefits accrued to that point. The normal cost is useful in evaluating the impact of retirement plan changes on costs and enables comparisons of the cost of one pension plan to another.

Accrual accounting also recognized the liability to pay retirement to some percentage of current service members as a future obligation and thus made the total cost of current personnel decisions evident (DoD OSD, 1991.) It revealed the magnitude of the unfunded liability for current retirees and service members who acceded prior to 1984. Since normal cost contributions had not been made for current retirees and personnel with service prior to 1984, an unfunded liability had accrued. This initial unfunded liability of $528.7 billion was amortized over 60 years and is scheduled to be paid off by 2044.

In addition to placing the retirement system on sound actuarial footing, the adoption of accrual accounting was also politically convenient. Under the pay-as-you-go

system, any changes to the annuity formula would not affect budget authority or outlays for 20 years.[2] Accrual-based accounting yielded an immediate payoff for changes.

> Adoption of the accrual accounting system for military retired and retainer pay in the Department of Defense Military Retirement Fund made it possible for Congress to reduce apparent Defense appropriations for the current year without affecting the retired or retainer pay entitlements of any current retiree or member of the armed forces...Given the imperatives to reduce the Federal budget deficit in general and Department of Defense appropriations in particular, Congress achieved such reduction by the relatively painless expedient of changing the military retirement system in a way that would affect only persons who first became members of the uniformed service on or after August 1, 1986. (DoD OSD, 1991.)

By immediately recognizing changes in the future liability of retirement obligations, accrual accounting allowed Congress to reap the benefits of annuity reductions in the near term, without angering any current service members or retirees.

All disbursements to retirees come from the Military Retirement Fund. As of 30 September 1995, the Fund paid $2.14 billion in monthly nondisability retirement payments. The fund in turn receives money from three sources: annual normal cost payments from the Military Personnel Appropriation, transfers from the Treasury to amortize the unfunded liability, and interest payments on treasury securities held by the Fund. The DoD Board of Actuaries makes the calculations necessary to forecast the future liability of military retirement based on actuarial assumptions concerning inflation, wage growth, accessions, retention, retirement, and mortality.

Another benefit of the Fund comes from the additional security it provides service members and retirees. The existence of the fund alone furnishes near-term security, since benefits for the year can be paid regardless of whether Congress passes an appropriation

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[2] Congress has been unwilling to make any retroactive change to the system which would affect retirees or current service members. In the face of stiff opposition by DoD and retirees, Congress has instead taken the easier route of changing the system for new joins only.

bill. The fact that costs are fully recognized in advance confers a certain amount of long-term security as well. (DoD Actuary, 1995.)

C.   ABRIDGED HISTORY OF MILITARY RETIREMENT

A brief review of the evolution of the military retirement system is useful because it furnishes a context for subsequent discussion of the purpose of military retirement, as well as the description of proposed changes and evaluation of their chances for success.

The basic arrangement of a nondisability retirement system that includes voluntary and involuntary separation after a given career length was established in 1861. A series of legislation in the late 1940s, including the Officer Personnel Act of 1947 and the Army and Air Force Vitalization Act of 1948 codified a common retirement system for all the services and brought treatment of officers and enlisted personnel close to equality. The legislation established the eligibility for retirement annuities at 20 YOS, the unqualified right to retire at 30 YOS, and severance pay for involuntary separations. This system, which came under immediate scrutiny and criticism, was evaluated by ten major reviews and blue ribbon commissions over the next 40 years.

In 1948, both the Joint Army-Navy Pay Board and the Advisory Commission on Service Pay (also known as the Hook Commission) examined the system and offered conflicting proposals for change. Their proposals for change differed on whether the vesting and eligibility dates should be changed, whether the annuity should be immediate or deferred, and whether the system should be contributory or noncontributory. Congress adopted many of the Hook Commission's recommendations on active pay, but did not adopt any of the proposed changes to the retirement system.

The 1st Quadrennial Review of Military Compensation (QRMC) was convened in 1969. It recommended a two-tier system composed of a small annuity upon retirement from the armed forces to compensate for the second-career income loss, and an old-age annuity beginning at age 62. Both annuities were to be computed as a percentage of final salary based on years of service.

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The Interagency Committee on Uniformed Services Retirement and Survivor Benefits (IAC) was appointed in 1971 by President Nixon to review the recommendations of the 1st QRMC and further evaluate the retirement system. The IAC also proposed a two-tiered system but recommended vesting in an old-age annuity between 10 and 19 years of service. After some modifications to the proposals of both the 1st QRMC and the IAC, the Retirement Modification Act was submitted to Congress in 1974. Congress failed to pass the legislation. Instead it directed DoD to charter the Defense Manpower Commission (DMC) in 1976 to conduct additional studies.

The DMC reviewed many aspects of personnel and compensation policy. It too offered some proposals on reforming military retirement, including vesting in an old-age annuity at 10 YOS, and allowing members in occupational specialties requiring youth and vigor, particularly the combat arms to retire with 20 YOS while requiring noncombat specialties to reach 30 YOS for retirement. The DMC recommendations were not presented as legislation.

President Carter established the President's Commission on Military Compensation (PCMC) in 1977. It also recommended vesting in an old-age annuity at 10 YOS, with the date of eligibility for the annuity varying by length of service. Personnel with more years of service would be eligible to receive the annuity at an earlier age. It also recommended the establishment of a transition trust fund for each member, to which DoD would contribute graduated amounts according to basic pay and length of service. Upon separation, the service member could receive a lump-sum payment from the trust, take the funds in monthly installments, or roll the funds into another retirement account. After some modifications, DoD submitted the proposals of the PCMC to Congress as the Uniformed Services Retirement Benefit Act in 1979. It was never enacted. (Asch and Warner, 1994b.)

The Department of Defense Authorization Act of 1980 implemented the first major change to retirement benefits since the late 1940s by changing the base for retirement

annuity computation from final basic pay to the annual average of the highest 36 months of basic pay. Program cost reduction motivated this change.

The 5th QRMC met in 1983 and proposed a range of alternatives, including a two-tiered system with a reduced annuity in the second-career phase of military retirement. It disagreed with earlier proposals to vest prior to 20 YOS, and characterized the existing benefits for 20-year retirees as excessive. While the 5th QRMC was conducting its discussions of military compensation, President Reagan commissioned the President's Private Sector Survey on Cost Control (PPSS), better known as the Grace Commission, in 1984. The study's mandate was to find ways to reduce costs and inefficiencies in the federal government. The Grace Commission also recommended vesting in an old-age annuity at ten years of service, reducing annuities for 20-year retirees prior to age 62, offsetting retirement pay by the amount of Social Security income, reducing COLAs, and computing annuities using a less generous benefits formula. The Grace Commission's recommendations were reviewed by the General Accounting Office, the Congressional Budget Office, and the 5th QRMC. All three criticized them for focusing too narrowly on cost reductions without considering the impact of their recommendations on retention and force structure. (Pyle, 1995.)

The 5th QRMC submitted its own report in 1984, and after some modifications, DoD presented its recommendations as legislation to Congress in 1985. The Military Retirement Reform Act, which enacted the REDUX version of military retirement, implemented some of the recommendations of earlier reviews, such as a two-tiered system and overall reduction of benefits, but it stopped short of providing any benefits to those who separate prior to 20 YOS. (Asch and Warner, 1994b.) The military retirement system has remained virtually untouched since the enactment of REDUX.

D.   PURPOSE OF THE MILITARY RETIREMENT SYSTEM

Describing the purpose of the military retirement system performs several functions. First, after examining the historical context of the system, the description of

purpose sheds light on why changes to the system were infrequent and marginal in nature. Second, it provides a means to evaluate the efficacy and prospects for success of current proposals to modify the retirement system. Third, it highlights the need for change to correct some of the deficiencies of the system.

The DoD Actuary lists the following goals for the military retirement system (DoD Actuary, 1995, p. B-2):

- Ensuring that continued service in the armed forces is competitive with the alternatives.

- Keeping promotion opportunities open for young and able members.

- Making some measure of economic security available after retirement from a military career.

- Maintaining a pool of experienced personnel for recall in times of war or national emergency.

- Keeping the costs of the system affordable.

1.   Uniqueness of the Military Structure

The purpose of military retirement differs from the purpose of civilian sector retirement plans because of the military's lateral entry constraint. Most civilian-sector firms can hire personnel into any level of employment from entry level to senior management, and they are not concerned with generating turnover among senior employees to provide advancement opportunities for junior personnel. Civilian retirement plans function primarily as a tax-deferred method for transferring consumption from the present to the future, and are not consciously designed to affect the composition of the work force.[3]

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[3] The structure of private sector pension plans affects retirement timing decisions and influences the structure of the work force. However, penalties imposed on early departures and late retirements are fairly homogenous across all firms, and appear to have little correlation with the type of work force these firms require. This suggests that firms are not using pension plans to shape the work force to their particular needs, but are integrating them with Social Security to simplify their plans and employee retirement decisions. Under these circumstances, it is evident that private sector pension plans function primarily as tax-deferred savings tools rather than work force-management tools. (Ippolito, 19XX, p. 144 -148.)

The military's hierarchical structure, culture, and unique training requirements constitute a lateral entry constraint. The armed services cannot hire personnel from outside the organization to command ships, battalions, and squadrons, or fill other top-level billets. Since the military cannot hire personnel from outside the organization to fill vacancies above entry level, "it must access and train large numbers of entrants before identifying for advancement those who have the talent to perform the higher level tasks in the organization" (Asch and Warner, 1994a, p. 20.)

2. Retirement as a Force-Management Tool

The principal purpose of the military retirement system has been a topic of discussion since the Joint Army-Navy Pay Board and the Hook Commission reviewed the current system at its genesis. The 1st, 5th, and 7th QRMCs have also dedicated significant intellectual capital to consideration of the issue. While there is some debate on the importance and legitimacy of secondary purposes, there is a consensus that military retirement functions first and foremost as a force-management tool. Force management is the method by which DoD achieves an active duty and reserve personnel structure with the desired distribution of ranks, ages, experience levels, and occupational specialties. The retirement plan aids force management in several ways.

a. Ability Sorting and Self-Sorting

Ability sorting is the function of the system that segregates the personnel who have the capability and skills to perform at the higher levels of the organization from those who do not. Military personnel policy achieves ability sorting through minimum performance standards, promotion "contests," and up-or-out rules that require the involuntary separation of personnel who reach established year-of-service limits without progressing to the next rank[4].

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[4] This is called "High Year of Tenure."

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Self-sorting describes the capability of the system to induce members to make this segregation on their own. The 20-year vesting provision provides the self-sorting mechanism. The reward of military retirement is significant and attractive, but it is available only to those who can complete at least 20 years of service. Thus the expected payoff varies among individuals according to their probability of advancing sufficiently in rank to reach 20 years of service. To receive the annuity, service members must progress through a series of promotion contests and avoid the up-or-out provisions that will separate them involuntarily prior to 20 YOS should they fail to progress in rank. Those service members who believe they have the ability to succeed and get promoted will try to do so because their expected payoff for retirement is high. Service members who realize they are unsuitable for higher level positions and are thus unlikely to be promoted will have a much lower expected payoff for retirement. Thus, the system will encourage them to leave early on before they invest much time. (Asch and Warner, 1994b.)

b. *Effort Motivation*

The military retirement system also aids force management by incentivizing hard work among its members. People respond to incentives. The military pay structure encourages hard work by providing increased pay for promotions. As long as hard work increases the probability for promotion, the pay raises will encourage people to increase effort. But as personnel progress in rank, two factors reduce the incentive for effort. First, because the number of remaining promotions is reduced, the total remaining expected payoff from increased effort is lower. Second, because the less able have been eliminated in previous promotion selections, the remaining pool of personnel is more homogenous, making it difficult for personnel to distinguish themselves. This decreases the probability that hard work will improve the chances for promotion because there are fewer people remaining to pass, and passing is harder to do. Decreasing payoff and decreasing probability reduce the incentive to work harder. To maintain incentives for hard work at higher ranks, the pay chart must be skewed to provide a continuing reward

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to effort. In other words, the additional pay from promotion should grow at an increasing rate as rank progresses. The active duty pay chart is only moderately skewed towards higher ranks and does not sufficiently offset the decrease in incentives for hard work described above. (Asch and Warner, 1994a.)

The retirement annuity provides skewness to the higher ranks because only personnel reaching the superior ranks can attain sufficient time in service to receive the annuity. And since the retirement annuity is based on the final years of pay, any additional pay increase resulting from promotion will increase the size of the annuity. The additional skewness added by the retirement annuity provides significant incentive for personnel to work hard as they progress in rank. (Asch and Warner, 1994a.)

c.   *Separation Incentive*

An important function of military retirement is the incentive it gives personnel to separate once they reach the eligibility point. The Hook Commission recognized the importance of this function in its 1948 report.

> [A] sound retirement system is essential to solving the superannuation problem. The services must be kept young, vigorous, and efficient; a sound retirement plan with a proper compulsory retirement age will permit youth and brains to rise to the top in time to be effective.

The importance of solving the superannuation problem (service members growing too old to perform their functions) was demonstrated in the Civil War and World War I, when many of the officers filling command billets were too decrepit to deploy to the field with their units and young officers exercised responsibility far exceeding their rank (DoD OSD, 1991.) The military needs personnel who possess youth and vigor, particularly in the combat arms, and an older force is less likely to meet the extraordinary physical performance standards the military requires.

The immediate annuity upon retirement, regardless of age, is a unique feature of military retirement. Most civilian sector pension plans require employees to

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reach normal retirement age (usually between 62-65) to be eligible for an unreduced retirement annuity. However most civilian employers do not require youth and vigor of their employees, nor are they necessarily concerned about providing opportunities for advancement for younger personnel.

The military must sustain sufficient turnover in the upper ranks to prevent stagnation of personnel in the middle ones. If the chances for promotion are slim, and the wait between promotions is long, retention will suffer. The rigors of combat demand that military personnel meet high standards of physical fitness. These factors require that personnel be separated from the military at some point, regardless of their individual productivity.

Because retirees can receive an immediate annuity upon separation from active duty, the gain to staying and the loss of leaving are significantly reduced. This is particularly important for the military since there is a well-documented income loss during second careers for military personnel. The soldier in his middle forties who has spent a career in one of the combat arms may find himself ill-prepared for civilian employment. Aging personnel with military-specific skills face a loss of income when transitioning to the private sector. Given the opportunity to do so and absent other incentives, many would choose to stay on active duty past their prime to maximize their income. Without some incentive to separate, service members in this position will tend to remain on active duty until they are forced to leave.

This brings up a common criticism of the generosity of military retirement. Critics ask why DoD must pay people to leave active duty when they could separate them involuntarily. Certainly, involuntary separation can be used to prevent superannuation, or to otherwise reduce end strength. However, reliance on this mechanism has a negative effect on morale, and may impact adversely on the retention of younger service members. It might also require the payment of a "regret premium" to compensate service members forced to leave active duty (Asch and Warner, 1994a, p. 22.) If these disaffected service members lobby lawmakers to change the policy or make exceptions, the force structure

that might be forced on DoD could reduce productivity and increase costs. Although their magnitude is difficult to estimate accurately, when these costs are considered, it may be less expensive to give incentives for voluntary separation. (Asch and Warner, 1994b.)

The structure of the benefits formula, which increases the annuity as a percentage of basic pay from 20 to 30 YOS, pushes many people to leave once reaching initial eligibility, encourages some of the most able (or at least most likely to be promoted to the highest ranks) to remain longer, then provides a powerful incentive to separate at 30 YOS by capping benefit accrual at that point.

Military retirement thus produces sufficient incentives for separation without resorting to involuntary methods. Asch and Warner note that "separation pay is the elixir that eases termination from the organization and weakens potential criticism about the capriciousness or arbitrariness of the system." They also point out that inducing voluntary separation at the proper point and thus avoiding the negative effects of involuntary separation is the distinct function of the military retirement since the other functions, ability sorting, effort motivation, and retention, could all be achieved through other methods. (Asch and Warner, 1994b.)

3.   Rewarding for the Hardships of Military Life

Many retirees believe that military retirement is a reward for enduring the hardships and deprivations that go along with service in the armed forces. This belief incites vigorous and angry protests at the very mention of reducing benefits or otherwise modifying the system. Although the argument is compelling, it is fundamentally flawed, and the 1st QRMC rejected it in 1969. The Commission astutely pointed out that if retirement was the reward for enduring hardships, then the system was grossly inequitable because only personnel who made it to retirement received this reward. Personnel who served for less than 20 years, particularly those that were drafted and served during times of war, also endured great hardships, but received no such reward because they did not

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retire from active duty. Presented in this way, it is clear that military retirement does not function as a reward for the hardships of service.

4. Compensation for Second-Career Income Loss

Personnel retiring after 20+ YOS typically have fewer opportunities in the private sector than personnel who left the military earlier, or who never served in the armed forces. Personnel who separate after long military careers typically don't possess the skills civilian employers want. The age and higher expectations for status make senior service members unsuitable for the majority of entry-level positions. For these reasons, many retired service members earn smaller incomes than their non-military counterparts during their second-career phase. Some personnel earn incomes lower than their active duty pay. This phenomenon is called the second-career income loss. Several studies estimate that military personnel earn incomes which are 25 to 30 percent lower than their peers who never served in the military (Asch and Warner, 1994b.)

Military retirement must compensate for this earnings loss to induce personnel to take the time and effort to acquire military specific skills that will be of no use in civilian employment. Additionally, the more unique to the military a particular skill is, the less transferable those skills will be and, thus, the greater the income loss incurred. Under these circumstances, personnel in the most military-specific specialties such as the combat arms (infantry, artillery, armor) will suffer a greater second-career income loss and will be less willing to leave the armed forces. However, the personnel in these occupational specialties are the ones that DoD must encourage to leave early because of the pronounced requirements for youth and vigor the combat arms demand.

In compensating for the second-career income loss, military retirement equitably treats service members who stay on and acquire military specific skills while simultaneously offering the separation incentive necessary for sound force management.

5. Transferring Current Consumption to Future Consumption

Providing economic security after retirement from a military career is one of the purposes listed by the DoD Actuary in its description of the retirement system. Clearly, military pensions do provide a measure of security for military retirees, but this role is not the principal purpose of the system. In its discussion on this issue the Hook Commission made this point.

> Other concepts of fair treatment and the *traditional concepts of retirement* for those taking up the profession of arms are also important and have been given consideration but the Commission does not consider them to be controlling. (Asch and Warner, 1994a, p. 22.)

In a macro perspective, the military retirement system does transfer current consumption to future consumption. The Department of Defense has a finite budget, and it funds both active pay and the annual normal cost payments to the Military Retirement Fund from the Military Personnel appropriation. Thus, each dollar transferred to the fund for retired pay is unavailable for active compensation. In this sense, military pensions transfer current consumption to future consumption. In the micro perspective, this transfer of resources is inefficient and unjust. All personnel forgo current consumption to fund military retirement, since active pay is reduced for all personnel, regardless of whether they retire. However, only 17 percent of military personnel receive a retirement annuity, so, for the large majority, their sacrifice of current consumption yields no future benefit. If providing future economic security for military personnel is a function of the military retirement system, then it needs some sort of reform because it does it so poorly.

6. Summary of Purpose

The purpose of the military retirement system is complicated and involves many issues. The fairness, affordability, and effectiveness of the systems are key topics of discussion. Measures of effectiveness usually concentrate on how well the system fulfills its many stated purposes such as providing economic security in retirement, offsetting the

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second-career income loss, and facilitating force management. The military compensation system, of which retirement is a component, must be fair to all members, and it should provide some degree of economic security in retirement to personnel, regardless of whether they reach the armed forces' delayed vesting point. Each member of the uniformed services should have the same rights as civilians to save for retirement. However, changes to the system which are designed to make it more equitable to all members are acceptable only if they do not have an adverse impact on force management. The discussion and analysis that conclude this chapter are based on the belief that while all of the purposes are valid, military retirement is principally a force-management tool, and that any proposal to modify the system must be evaluated according to how it affects this function.

E.   PROPOSALS FOR CHANGING MILITARY RETIREMENT

This section reviews some of the proposals for changing the military retirement system. Discussing these proposals accomplishes two functions. First, it shows that the belief that the system is in some way flawed and in need of reform is widely held. Second, it illustrates the fractious nature of the debate and highlights the lack of unity among those who advocate reform. The author contends that the variety of opinion on how to reform military retirement, combined with reasoned DoD opposition to change, significantly decreases the probability that any type of change will occur.

Several components of the retirement system could be altered. The method and the degree to which any element or group of elements would be changed ranges from marginal reform to structural overhaul. These areas are listed below.

- The type of system: defined benefits or defined contributions.

- The benefit accrual formula used to compute the annuity amount.

- The formula and frequency of cost of living adjustments.

- The amount of employee contributions, government matching, and plan investment options in defined contribution plans.

- The eligibility point: immediate versus deferred annuity.

- The vesting point.

The proposals discussed below use changes to one or more of these areas to accomplish their proponents' vision for reform.

1.   Earlier Vesting

There have been a number of recommendations to vest military personnel in the retirement system earlier in their careers. Many propose vesting members in an old-age annuity at some point after 10 YOS. The advocated vesting point varies from 10 to 15 years of service. Eligibility varies from age 55 to 62, usually depending on how long the member served. Some of these proposals include cost-of-living adjustments while others do not. In these versions, personnel who reach the vesting point but separate prior to 20 YOS would be eligible to receive an annuity once they reached normal retirement age. A recent report by the General Accounting Office included a proposal for 10-year vesting in an old-age annuity based on years of service, transitioning to an immediate annuity with 20 YOS (GAO, 1997.) Some of these recommendations for earlier vesting in an old-age annuity would extend the eligibility date for an immediate annuity to 30 years.

Asch and Warner refer to this class of proposals as "Band-Aid Vesting." They predict that these changes would have little impact on accessions, retention, ability sorting, and effort motivation because of the low net present value of the deferred annuity. Their analysis examined the impact of a plan with 10 year vesting in an old-age annuity commencing at age 62. They predict that this change would increase the DoD normal cost by 3.1 percent and add $582 million annually to military personnel costs. (Asch and Warner, 1994a.)

Another proffered change to vesting provisions includes an immediate annuity at 15 YOS. The RAND analysis predicts a small impact on force structure from this plan, but predicts that normal costs would increase by 3 percent to 10 percent, depending on

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whether the annuity was computed using the REDUX or High-3 formula. Asch and Warner contend that a similar impact on force structure could be achieved at much lower cost by changing the active duty pay scale. (Asch and Warner, 1994a.)

The chief obstacle to earlier vesting in either an immediate or deferred annuity is the effect it has on force structure. Earlier vesting allows personnel to reach retirement eligibility at fewer years of service and lower ranks. This will encourage some personnel to remain on active duty despite low prospects for advancement because it will be easier for them to meet the lower eligibility requirements for retirement benefits. It also reduces effort incentives because personnel need not attain as high a rank to qualify for retirement. Any proposal that includes earlier vesting must find ways to mitigate these reductions in incentives for ability sorting and effort motivation. Without delayed vesting, the military may have difficulty encouraging those with potential for top leadership to seek advancement and to discourage from lingering those whose aptitude for military service limits them to an initial term.

2. Thrift Savings and 401(k) Plans for the Military

Salary deferral plans like the Thrift Savings Plan portion of the Federal Employee Retirement System and the popular 401(k)s used by many civilian employers are touted as a way to give all service members greater economic security in retirement, as well as a method for stimulating savings. These plans allow participants to set aside pre-tax income subject to certain limits. Taxes on contributions, interest, dividends, and capital gains are deferred until the money is withdrawn. Some recommendations for a military version include government matching of employee contributions, others do not. One imaginative approach suggests gradually increasing the amount of government matching as personnel gain seniority then tapering it off towards the end of a career as a way to induce effort and ability sorting at the early and mid-career point, while still providing a separation incentive to senior personnel.

The Armed Forces Tax Council is currently drafting a proposal to allow pre-retirement eligible members to contribute up to 5 percent of their basic pay, with no government matching, to a thrift savings program. There is no legislation pending, and the proposal is meeting some opposition from within DoD over concerns of "putting retirement on the table."

Because 401(k)s and Thrift Savings Plans set aside contributions prior to taxes, this plan would reduce government revenues at least in the short run. Any level of government matching of contributions would also increase the defense budget.

3.   The RAND Proposal

Asch and Warner proposed a method which they believe would reduce the inequity of delayed vesting, maintain constant the overall effort motivation and ability sorting incentives of the compensation system, and reduce costs for DoD. They recommend vesting personnel with ten years of service in an old-age annuity that commences at age 60. To compensate for the second-career income loss and to induce separations at the proper point, they recommend severance pay for all personnel who are detached voluntarily or involuntarily. The amount of the severance payment would the product of the member's final basic pay, years of service, and a separations payment multiplier. According to their model, maintaining retention, effort and ability sorting constant would require an increase in active pay if the separations pay multiplier was set at 10 percent.[5] The authors calculated that no increase of active pay would be required to maintain current incentives if the multiplier was set at 25 percent. They also predict that this plan could save $600 million and reduce the normal cost by 10 percent annually. (Asch and Warner, 1994a.)

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[5] Currently, personnel who are involuntary separated between 10 and 19 years of service receive severance pay of 10 percent of the final annual basic pay times the number of years of service.

4.   Structural Reform

Certain proponents of change advocate more drastic structural reform. Some have advocated eliminating military retirement altogether, using active pay only to manage the force structure. The necessary role of retirement as a separations incentive, and the distaste Congress and DoD seem to have for extreme changes, condemn this type of radical proposal to failure.

Another proposal for significant change is to scrap the current system and replace it with one that resembles the Federal Employee Retirement System. Such a system would provide a basic old-age pension for all employees, allow contributions into a thrift savings plan with government matching, and integrate benefits from Social Security. The advantage of this plan is that a system is already in place to administer it, reducing the burden of implementing such a system for military personnel. The disadvantage is that it does not take into account the peculiar requirements of the military and its lateral entry constraint.

One class of proposals would allow DoD to vary the vesting point, eligibility point, and benefit formulas by officer/enlisted category, military occupational specialty, and service as a way to improve the flexibility of force management. The benefit of such a proposal is it would allow DoD to fine tune retirement's effect on force structure. The disadvantage is that it abandons DoD's cultural dedication to the principal of horizontal equity in pay, as well as its traditionally open and clearly understood pay scale. Basic pay rates, longevity increases, and retirement eligibility are uniform throughout DoD because military compensation, based on the principle of comparability, recognizes that all members are legally liable to armed conflict and any specialization is secondary to this fact (OSD, 1996).

5.   The Atmosphere for Change

The prospects for changing the military retirement system have never been good. The system has been remarkably stable since its genesis after the Civil War, and the major

changes, most of which were marginal in nature, have occurred decades apart. Once the legislation in the 1940s cleared up the discrepancies between the services, military retirement remained virtually unchanged until 1980. The emphasis of the most recent changes in 1980 and 1986 was on reducing costs and increasing the force management flexibility, in that order. The authors believes four factors -- cost concerns, DoD reluctance, Congressional unwillingness, and the complexity of evaluating the impact on force structure -- decrease the likelihood of any fundamental change to military retirement.

Concerns over the cost of the system not only work against proposals that would expand benefits, but also discourage benefit reduction proposals. The federal budget has been tight for three decades. The main focus of this year's budget debates has been on finding sources of budget savings to finance tax cuts and deficit reduction. In an atmosphere where defense budgets have been declining in real terms for years, any proposal that increases the cost of the retirement system is dead on arrival. The peculiar nature of the funding structure for retirement also discourages changes that reduce benefits. DoD believes it is unfair and dishonest to change the terms of retirement compensation for an individual after that person joins the armed forces. This belief is known as the implicit promise, and DoD's strident and successful defense of it means that changes to the system are almost always grandfathered so that they only affect new joins. The Military Retirement Fund's use of accrual accounting captures any such savings as reduction to the future liability of the retirement system, which shows up as a reduction in Defense budget authority. However, there is no immediate impact on net outlays. Benefit reduction proposals will usually be met with resistance from DoD, and in light of the small immediate payoff, Congress is less willing to fight against a well-organized defense.

Congress itself expressed resistance to dramatic change when it passed the Military Retirement Reform Act of 1986. The conference committee which finalized the legislation that gave us REDUX said it hoped that its moderate changes would "put the issue of structural reform of the uniformed services retirement system to rest for the foreseeable future" (DoD OSD, 1991, p. 462). The historical review at the beginning of the chapter

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also demonstrates that Congressional gridlock and bureaucratic inertia are significant obstacles to change. There was no shortage of commissions, studies, or proposals, but Congressional enactment of recommendations occurred infrequently.

The Department of Defense is wary of changes for several reasons of its own. With respect to cost concerns, the department knows that many in Congress see the Defense budget as a source of savings or funds for other programs. They are hesitant to consider proposals because they fear that what goes into Congress as a change to improve benefits or increase flexibility may come out as a cut in retirement funding. DoD is also loathe to violate its implicit promise to retirees or current service members by considering retroactive changes to benefits formulas or COLAs, and has vigorously opposed past efforts to make retroactive changes (GAO, 1997).[6]

DoD's resistance to modifying military retirement in the near future is summed up in the response from the Assistant Secretary of Defense for Force Management Policy to the GAO report on possible changes to the retirement system. The response listed the following concerns on the specific proposals listed in the GAO report, and on change in general: (GAO, 1997,p 52.)

- The current system should be allowed to stabilize and the impact of the 1980 and 1986 changes should be evaluated before further changes are enacted.

- The current system effectively provides the force the nation needs.

- Costs are already declining due to the reduction of benefits and the declining force size.

- DoD must honor the implicit promise to retirees and current service members. Any change which reduces their benefits would be a breach of faith and would have a negative impact on morale and the credibility of the Department of Defense as an employer.

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[6] An element of the FY96 budget would have recomputed the retirement annuity for all service members and retirees who became members of the armed forces before 8 September 1980. The change, called High-1, would have changed the annuity from a percentage of final basic pay to a percentage of the average of the highest 12 months of service. Intended as a cost cutting measure, the idea ran into such a buzz saw of opposition from DoD and retirees that it was quickly dropped from the budget.

- The immediate annuity is an essential feature and must be maintained as part of the system.

- Varying the system by service, military occupational specialty, and officer/enlisted status would be unfair and needlessly complicate the system.

- Adoption of system like the Federal Employee Retirement System or the early vesting in an old-age annuity is opposed because of the unknown impact on retention.

A final factor that makes change to the retirement system in the near future unlikely is the fact that any proposal must be evaluated with respect to the principal purpose of the military retirement system: force management. The complexity and contentiousness of evaluating the impact of changes on force structure make this task daunting. Recent experience with the Quadrennial Defense Review and the fate of proposals for another two rounds of Base Realignment and Closure demonstrate that neither DoD nor Congress has much stomach for dramatic or possibly painful changes to the status quo. The combination of these four factors -- cost concerns, DoD hesitancy, Congressional unwillingness, and the complexity of evaluating the impact on force structure -- make the probability for change near zero.

III. IRAS, ERISA, AND EQUITY

A. INTRODUCTION

The Internal Revenue Code provides tax benefits for employers who furnish, and employees who participate in a qualified pension plan, but the plans must comply with certain minimum standards to be eligible for favorable tax treatment. Participants in qualified plans are restricted from deducting contributions to another tax-favored retirement program, the Individual Retirement Account. Service members are treated as if they had a qualified pension plan for the purpose of determining IRA deductibility, but are not provided the same protections that qualified private pension plans provide. This chapter describes IRAs, the Employee Retirement Income Security Act, and the statute governing private pension plans to highlight the inequity of such treatment. It recommends extending IRA deductibility to all service members, regardless of income, to redress this inequity.

B. INDIVIDUAL RETIREMENT ACCOUNTS

Employer-sponsored pensions are a tax-advantaged way for workers to save for retirement. Employers deduct their contributions to pension plans from corporate earnings, but workers do not pay taxes on this deferred compensation during the period in which it is earned. Pensions also reduce taxes for employers and employees while increasing the rate of return on retirement savings since taxes are deferred for interest, dividends, and capital gains. Unfortunately, such beneficial treatment of retirement saving was available only to workers covered by an employer-provided pension, so Congress implemented IRAs as part of the Employee Retirement Security Act of 1974 to extend the benefits of tax-deferred retirement saving to workers not covered by a pension. The Economic Recovery Tax Act (ERTA) of 1981, which extended IRA eligibility to all American workers, reflected Congress' desire to increase private retirement saving throughout the population. Then in 1986, the Tax Reform Act restricted the deductibility

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for certain workers to reduce income tax revenue loss resulting from IRA participation. (Employee Benefit Research Institute, 1988.)

Currently, any worker with income can contribute each year the lesser of 100 percent of his earnings or $2,000. Two-earner couples can contribute $2,000 each for a total of $4,000 annually. The annual contribution limit for spousal IRAs, available for workers with nonworking spouses, was raised to $2,000 from $250 in 1997. The Internal Revenue Service defines income as wages, salaries, tips, professional fees, bonuses, commissions, self-employment income, and alimony payments. Income does not include rental income, capital gains on the sale of property, interest, or dividends (Department of the Treasury, 1996b).

The Tax Reform Act of 1986 did not eliminate IRA eligibility for anyone but it did reverse ERTA by restricting contribution deductibility for certain taxpayers. Workers not covered by an employer-provided pension can still fully deduct their annual contributions to IRAs, but workers who are covered by a qualified pension plan cannot deduct contributions if their adjusted gross income exceeds the thresholds. If either spouse of a two-earner couple is covered by a pension plan, both are considered covered for the purpose of contribution deductibility. Single workers with adjusted gross income less than $25,000 and joint filers with adjusted gross income less than $40,000 can deduct their entire contributions. Single taxpayers with adjusted gross income greater than $35,000 and joint filers with income greater than $50,000 cannot deduct any of their contribution. Taxpayers with income between these contributions can deduct a portion of their contribution that decreases with income.[7]

The taxes on capital gains, dividends, and interest that accrue to IRA assests are deferred until they are withdrawn, regardless of whether the contributions were deductible, partially deductible, or non-deductible. When distributions are made from IRAs, the funds are taxed as ordinary income. Deductible contributions are taxed when

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[7] Single taxpayers whose income is in the phase-out range can compute their deduction from the following formula: 0.2*(35,000 - AGI). Married taxpayers use the formula 0.2*(50,000 - AGI).

they are withdrawn, but non-deductible contributions are not since they were taxed in the year they were earned. (Department of the Treasury, 1996b.)

In addition to income taxes due, a ten percent penalty is imposed on distributions received before the IRA owner is 59½. This penalty is intended to encourage long-term retirement saving, and discourage the use of IRAs as a method of short-term tax avoidance. Workers can make contributions until they reach age 70½, and must begin receiving distributions by 1 April of the year after they turn 70½.

Section 219 of the Internal Revenue Code specifies that active participation in an employer-sponsored pension plan restricts contribution deductibility for workers with adjusted gross incomes exceeding the specified limits. Workers are considered active participants if they are accruing credit for a potential retirement benefit, regardless of whether they have been vested in that benefit. Since military personnel accrue years of service for the purpose of calculating their retirement pay, they are considered active participants in a pension plan, and thus face the income restrictions on contribution deductions. (DoD OSD, 1996 and Department of the Treasury, 1996a.)

C. THE EMPLOYEE RETIREMENT INCOME SECURITY ACT OF 1974

To qualify for favorable tax treatement, pension plans must comply with certain standards established by the Employee Retirement Income Security Act. These standards, which cover vesting, funding, and reporting features of pension plans, protect the interests of employees. The Congressional Research Service summarizes the purpose of ERISA as follows:

The Employee Retirement Income Security Act of 1974 (ERISA) (P.L. 93-406) is designed to protect the interests of participants and beneficiaries of most private sector employee benefit plans. Most of the law's provisions deal with pension plans. ERISA does not require that employers provide pensions, but those that do must meet minimum standards in regard to who must be covered, how long a person has to work to be entitled to a pension, and how much must be set aside each year by the employer to provide pensions when they are due. ERISA also created the Pension Benefit Guaranty Corp to guarantee the payment of pension benefits in case of underfunded defined benefit pension plan is ended. Public employee pension plans and those of curches are generally not subject to the law or its protections. (Schmitt, 1994.)

Qualified pension plans get tax-favored treatment, while nonqualified plans, those that do not meet minimum ERISA standards, do not. When Congress actied to reduce the revenue loss from IRAs, it limited contribution deductibility for workers with qualified pension plans since they already enjoy tax-favored retirement saving. Workers without pension plans, or with nonqualified plans, remained eligible to deduct their IRA contributions.

Military retirement is treated as a qualified plan by the Internal Revenue Code, even though it does not comply with several ERISA standards. Although public sector pension plans are exempt from ERISA standards, it is patently unfair to treat military retirement as if it qualified for tax-favored treatment when in fact it does not.

Military retirement violates minimum ERISA requirements in several areas, the most significant of which is vesting standards. Vesting is the point at which an employee retains a nonforfeitable right to at least some portion of the retirement benefit accrued to date. This right is retained even if the employee ceases to be employed before they reach the eligibility age for benefits. Under ERISA, employers may vest their workers in one of two ways. They may use a graduated schedule, where employees are vested in a portion of their employer's contributions that increases to full vesting over a designated period. Alternatively, employers may cliff-vest the employees in benefits by entitling employees to 100 percent of the employer contributions all at once when they achieve a designated lenght of tenure with the company. The minimum vesting schedules under both are shown

in Table 3.1. Employers may vest their workers sooner than these minimum standards, but plans that do not meet the standards are considered nonqualified, and thus not eligible for tax-favored treatment (EBRI, 1988).

Table 3.1 **Minimum Vesting Standards Under ERISA**

YEARS OF SERVICE	PERCENTAGE UNDER CLIFF VESTING	PERCENTAGE UNDER GRADUATED VESTING
1	0 percent	0 percent
2	0 percent	0 percent
3	0 percent	20 percent
4	0 percent	40 percent
5	100 percent	60 percent
6	100 percent	80 percent
7	100 percent	100 percent

Source: Congressional Research Service

Military retirement diverges sharply from ERISA vesting standards. It requires personnel to serve 20 years before they are vested in their retirement benefit. This 20-year cliff-vesting provision markedly separates military retirement from qualified private pension plans that receive tax-favored treatment.

ERISA requires that pension plans be fully funded. Defined contribution plans are, by definition, fully funded, since the future retirement benefit accrues in an individual account for each worker. The employer contributes to the account in the year when the retirement benefit is earned, and the employee is vested in employer contributions according to the schedules shown in Table 3.1. The worker bears the full responsibility for investment gains and losses on assets in the account. Emplyees are immediately vested

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in any mandatory or voluntary contributions they make to the plan. Defined benefit plans, in contrast, do not have individual accounts for each worker. Instead these plans provide an annuity upon retirement, the amount of which is a function of career pay and length of service. The employer must make annual contributions to the pension plan fund to pay for the expected retirement benefit that will become payable to employees as a result of their service during the year and bears the risk of any investment losses on plan assets. The amount of the annual contribution required to cover this future liability, called the normal cost, is computed based on sound actuarial assumptions. Unfunded liabilities that arise from past work for which no contributions were made, or from retroactive changes to the benefit formula, must be amortized over no more than 30 years. (Schmitt, 1994.)

Military retirement was funded on a pay-as-you-go basis until the establishment of the Military Retirement Fund in 1984 brought the system into compliance with the full funding requirement of ERISA. However, the unfunded liability of $528.7 billion which resulted from the switch to accrual-based accounting in 1984 was amortized over 60 years, rather than 30 years as required by ERISA. The funded portion of the liability, the Military Retirement Fund, is invested in U.S. Treasury securities. Until the liability is fully amortized, the pension benefits of current and future retirees are backed only by the word of the federal government.

The administrator of the pension plan must furnish each participant with an annual report of the status of the plan and its assets. The report must be written in a manner which can be understood by the "average person," and must describe the benefits available under the plan, as well as the method for claiming benefits and the circumstances which can result in disqualification or ineligibility for benefits. While the military provides separation counseling for retiring and terminated service members, no annual report on the retirement systeme is provided.

ERISA provides a legal basis for the concept of the implicit promise discussed in Chapter II. The implicit promise is that the military will not change the terms of the retirement system for personnel who have already entered the service. Even though there

is no written provision for such a promise, practice and general understanding confirms its existence. ERISA prohibits employers from changing the terms of a pension plan in a way that reduces the benefits employees have already accrued under the plan. If the vesting schedule is changed, the percentage of the vested benefit accrued by an employee prior to the change cannot be reduced. Additionally, plan participants with at least five years of service may elect to remain under the vesting schedule that existed prior to the plan's ammendment. (Schmitt, 1994.)

If an employer chooses to provide a pension plan for its employees, it must meet coverage standards to be considered "qualified" under the Internal Revenue Code . ERISA mandates that employees over 21 years of age with one year of service must be covered by the employer-sponsored pension plan, but plans which immediately vest all active participants may require employees to accumulate three years of service and be 21 years old before they are covered. Employers are required to count all service by employees older than 18 towards the plan's vesting requirements and benefit formula. Military retirement complies with the coverage standards since all active and reserve service is counted towards retirement, and all personnel can receive retirement if they reach 20 years of service.

Pension plans that comply with the minimum standards set forth under ERISA and the Internal Revenue Code are considered qualified plans and are eligible for favorable tax treatment. Employers can deduct contributions to qualified pension plans from their before-tax earnings, thus reducing their tax burden. Employees are not required to pay taxes on these contributions as current compensationm, and the capital gains, interest, and dividend income on pension plan assests are tax-deferred until they are paid out as benefits. (EBRI, 1988.) The fact that employees with employer-sponsored pension plans already have a tax-favored way to save for retirement supported Congress's decision in the 1986 Tax Reform Act to restrict contribution deductibility to workers without qualified pension plans.

D.   MILITARY PENSIONS AND IRA CONTRIBUTION DEDUCTIBILITY

The disparity in the tax treatment of military pensions and the protections of retirement rights for military personnel invites the argument that military retirement should be treated as an unqualified plan, making service members eligible to deduct their IRA contributions. On one hand, the Internal Revenue Code specifies that military retirement is considered a qualified pension plan for the purpose of IRA contribution deductibility so military personnel are treated identically to participants in qualified private pension plans. On the other hand, ERISA exempts public retirement plans from compliance with its provisions, so service members are not entitled to the same vesting, reporting, and funding protections afforded private sector workers.

The inequity of this situation could be redressed by changing the treatment of military pensions under the tax code, or by changing the retirement system to bring it into full compliance with ERISA. For reasons enumerated in Chapter II, dramatic modification of the retirement system is unlikely, leaving a change in tax treatment as the most realistic option. The argument that military personnel should be able to deduct their IRA contributions regardless of income can be addressed from both equity and efficiency standpoints.

1.   Equity

The author argues that it is unfair to treat service members as if they had a qualified pension plan, while not providing them the same protections and portability that private pension plans give their participants. To be thorough, however, the discussion should address equity as it pertains to the three principle shareholders of the military retirement system: military personnel who separate prior to retirement eligibility, military retirees (including military personnel who eventually reach retirement), and taxpayers.

The system is obviously unfair to the significant portion of military personnel who are separated, voluntarily or involuntarily, before they reach retirement eligibility. Only 17 percent of those who join the armed forces ever receive military pension benefits,

compared to the two-thirds of all workers, and the vast majority of those earning more than the median income who retire with pensions (Ippolito, 1986.) Several of the commissions that reviewed military retirement criticized the plan for its unfairness[8]. The Joint Army-Navy Pay Board of 1947 referred to the system as a "tontine," an archaic financial scheme which benefits the few at the expense of the many. The unfairness of the system is evident to anyone who serves honorably for five, 10 or 15 years, and leaves the military with nothing but a handshake (Navy Times, 1991.) It is difficult to justify identical tax treatment of military and private pension plans when a service member can separate after 19 years with no right to retirement benefits, while a private sector worker who changes employers after seven years retains 100 percent of her accumulated retirement benefits. Disallowing IRA deductions for military personnel by summarily ruling that military retirement is "qualified" despite the obvious differences in rights and protections adds insult to injury.

The system is more than fair to current retirees, and the minority of service members who become eligible for retirement. The annuity is a generous percentage of active duty compensation, it is protected against inflation, and is payable immediately upon retirement, regardless of age. A service member who enlists at 18 years of age and retires from the military at age 38 with an immediate annuity of 40 percent of basic pay[9], has little basis for complaints of unfair treatment. However, military pensions are not excessively generous, but reflect the fact that military retirement is different from civilian retirement. Military retirees are usually separated before the traditional retirement age, and must find a new career until they can retire permananently. Military retirement compensates for the second-career income loss associated with this transition. Military retirees are also eligible

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[8] The Joint Army-Navy Pay Board (1947), the Interagency Committee on Uniformed Services Retirement and Survivor Benefits (1971), the Defense Manpower Commission (1976), the President's Commission on Military Compensation (1977), and the Grace Commission (1984) considered 20-year cliff vesting unfair to the vast majority of service members and recommended earlier vesting to correct the inequity.

[9] Basic pay is less than total military compensation, so care should be taken when comparing the annuity as a percentage of pay to the size of the annuity for private pension plans.

for recall to active duty and remain subject to the Uniform Code of Military Justice, while very few private sector employees can be forced back to work or remain subject to workplace regulations after retirement. Allowing military personnel who will eventually retire to deduct their contributions increases the generosity of the system.

Some critics of military retirement consider it unfair to taxpayers because of its cost. In a particularly one-sided and poorly researched polemic, Jacques Gansler describes the system as "the most expensive of all federal entitlement programs financed exclusively from general revenues," and maintains that there is little justification for maintaining such an overly-generous system (Gansler, 1989.) Gansler completely ignores the role of military retirement as a separation incentive, and makes an unfounded claim that physical strength and prowess are no longer essential in today's high-technology armed forces. His view of military retirement is also fundamentally flawed because the system is not an entitlement program, but rather deferred compensation, part of an overall package designed to attract and retain a workforce of the desired size and quality. If the country is buying too much defense, spending more than it needs by hiring a work force that is either too large, over-qualified for the task, or both, then compensation such as retirement pay can be reduced to bring the force structure in line with the nation's needs. We can spend less on military personnel, and as the work of Asch and Warner shows, get fewer and less qualified personnel for it, if we think the resulting force will be sufficient to accomplish our national military strategy.

Military retirement is more costly than typical private sector retirement programs, but this does not mean that the system costs too much. Rather it reflects the additional inducements required to attract and retain personnel in a profession whose hardships and risk to life and limb exceed that of the typical non-military job[10].

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[10] Protective services such as policemen and fire fighters also have jobs whose risks are comparable to those associated with military service. That retirement benefits for workers in these fields exceed that of other public employees whose jobs do not involve such risk supports the contention that compensation must be higher to attract personnel to these fields.

But this argument is not a question of fairness to taxpayers. It is instead an issue of spending priorities and strategy decisions. Military retirement can be called unfair to taxpayers only if the country is not getting what it pays for. If service members, who are compensated through active duty pay, benefits, and retirement pay, do not provide the required services for their pay, then the American taxpayers are being cheated. However, few critics claim that this is the case. The President, Congress, and the American people must decide how much they are willing to spend on military personnel, and how much defense is enough. The country will get what it pays for. If the nation wishes to spend less on military retirement while maintaining the size and quality of the force, it will have to raise compensation elsewhere. Retirement pay is not an entitlement, or a social welfare program, as Gansler implies, but rather a cost of doing business. Extending IRA deductibility to service members would not directly increase defense costs, but would slightly reduce tax revenues. This revenue loss is no more unfair to taxpayers in genereal than any other benefit that reduces taxes for a particular group, industry, or business.

2.   Efficiency

If substituting IRA deductibility for some other form of compensation could provide a military force of the same quality and size at less cost, then this would be a more efficient way to manage the force. To determine whether extending IRA deductibility to service members would be more efficient, the effect of doing so on retention, effort motiviation, and ability sorting must be evaluated. The author concludes that the impact on all three areas will be very small because the cash value of IRA deductibility is equivalent to a very small increase in compensation.

IRA deductibility should have no impact on effort motivation for military personnel. It is not a direct part of the compensation package, and the benefit, the reduction in taxes, is identical for all service members, regardless of their effort. The top perfomers will receive the same tax reduction as the malingerers, assuming they make identical contributions, so their is no additional incentive to work harder.

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However, IRA deductibility, if viewed as part of the total compensation package will affect the skewness of the pay structure. The personnel whose pay would be most affected are those at the higher pay grades since more junior personnel, who, because they are paid less, are probably below the income thresholds, can already deduct all or part of their contributions. The lower marginal tax rates for junior personnel reduce the cash value of the deduction compared to the value for senior personnel. This change skews the pay structure towards the senior pay grades, and, theoretically, provides an additional incentive for personnel to work harder for advancement. The additional skewness, however, would not be more than a few hundred dollars per year. Therefore IRA deductibility is unlikely to motivate much additional effort.

IRA deductibility could improve ability sorting. Active-duty personnel do not enjoy the tax advantage of deducting their IRA contributions. For many service members, this advantage would be worth $560 annually, but it varies between $300 and $620 depending on the service member's tax bracket. Personnel in the lower tax bracket, for whom the deduction would be worth $300, are probably below the income thresholds and qualify to deduct their IRA contributions anyway. Each year personnel stay on active duty, they lose this advantage. For someone who knows he will not advance far enough to qualify for retirement, this loss provides an additional incentive to separate early. Allowing all personnel to deduct contributions would eliminate this disadvantage, and would thus reduce the separation incentive for personnel who know they are not qualified for senior billets. Conceivably, universal IRA deductibility for service members could weaken the self-sorting mechanism.

For several reasons, the author concludes that the actual impact on ability sorting would be very weak. First, the tax advantage is a small portion of total compensation. For personnel who would actually receive a tax reduction, single people with adjusted income over $35,000 and married people over $50,000, the deduction is at most 1.6 to 1.1 percent of their annual adjusted gross income, and is a much smaller percentage of total compensation. Such a small pay raise is unlikely to have a measurable effect on

behavior. Second, by the time a service member's income exceeds the deduction thresholds he is already past his first term and in the middle-career phase, at which point the effect of a \$560 increase in annual income will be overwhelmed by other considerations[11]. Third, separating from the military will not guarantee that the service member will be able to deduct his IRA contributions. If his new employer provides a qualified pension plan, his IRA contributions will still be nondeductible.

For similar reasons, the effect of IRA deductibility on retention will be small. A one percent pay raise is unlikely to have a significant impact retentions, and the author believes that few people will link the tax advantage to military employment when making separation decisions.

There is a cost associated with modifying the tax treatment of military retirement. Although there is no change in the Department of Defense budget, allowing military personnel to deduct IRA contributions would reduce personal income tax revenue for the Treasury. However, since universal IRA deductibility for military personnel will have such a small impact on force structure, there is not an efficiency argument to be made either in favor of or against implementing the change.

E.   CONCLUSION

Individual Retirement Accounts give non-covered employees a tax-deferred way to save for retirement. Although military personnel are technically covered by military retirement, anyone who separates with less than 20 years of service is decidedly uncovered.

> Few things are more important for morale than that service members believe that they are being treated as fairly as possible, and conversely, few things undermine moreale more than a sense of unfair treatement. (DoD OSD, 1996, p. 7.)

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[11] Promotability, desirability of the next duty station, post-military employment prospects, and family considerations will dominate the separations decision.

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The treatment of military retirement as a qualified pension plan under the Internal Revenue Code is inconsistent with the Employee Retirement Income Security Act and unfair to the majority of personnel who never qualify for a military pension. Military personnel do not enjoy the protections of the law designed to protect employee retirement rights, but they are taxed as though they were. Allowing military personnel to deduct IRA contributions would eliminate this inequity while not significantly affecting force structure, current retiree benefits, or the American taxpayer.

IV. THE EFFECTIVENESS OF INDIVIDUAL RETIREMENT ACCOUNTS

A. INTRODUCTION

Congress designed Individual Retirement Accounts to accomplish two purposes. The first purpose, to provide a tax-deferred retirement-saving vehicle for workers without a pension plan, was discussed in Chapter III. The second, to increase national saving, is discussed in this chapter. If IRAs, in particular the tax deduction for contributions, encourage people to save more money, then this provides one more reason to extend universal IRA deductibility to service members.

Net national saving, defined as private saving plus public saving, has been declining for decades. In 1950, U.S. net national saving was 12.3 percent of net national product, but fell to 2.7 percent by 1993 (Hubbard and Skinner, 1996). Congress hoped IRAs would help reverse this trend by providing a higher rate of return on saving dedicated to retirement. However, IRAs have two opposing effects on national saving. They can increase private saving by encouraging people to save money they would otherwise have spent, but they decrease government saving by reducing personal income tax revenues.

Economists have debated the effect of IRAs on national saving since the policy was implemented, but are still far from agreement. One group of economists believes IRAs effectively stimulate additional saving. Another group argues that contributors merely shift funds from existing assets, or redirect savings destined for other accounts into IRAs, resulting in a tax windfall for contributors while yielding no additional saving. This group argues that IRAs adversely affect national saving because the program provides no additional private saving, but reduces government saving because the reduction in tax revenues increases the federal debt.

Economic optimists estimate that 50 percent of contributions are new saving, 20 percent are shifted from existing assets, and 30 percent are the result of the tax advantage (Poterba, Venti, and Wise, 1995). Several arguments support these estimates:

- Asset growth in IRAs was larger than the median financial assets of households before IRAs were available. The average American did not do much saving prior to the introduction of tax-deferred saving accounts, and subsequent to the start of IRAs, growth in IRA balances exceeded the pre-existing saving balances.

- Non-IRA financial assets of contributors did not decline enough to account for the increase in IRA assets. Additionally, non-IRA financial assets did not decline relative to the assets of people without IRAs, indicating that contributors are not redirecting money that they would have saved anyway.

- Holding age and income constant, financial assets increased as people had more time to contribute money to IRAs.

- The psychology of IRAs encouraged people to deposit money in the accounts, and to leave funds in the accounts undisturbed.

Economic pessimists concur that approximately 30 percent of IRA balances come from the tax advantage, but argue that no more than two or three percent of contributions are new saving, claiming instead that the majority of contributions are either redirected saving the contributor would have made anyway, or come from existing assets. They counter the new saving claims on several grounds.

- Estimates of existing assets of IRA contributors at the point of IRA introduction are biased downward because they include the assets of people who do not have IRAs. Using the existing assets of the entire population to estimate the existing assets of IRA holders prior to the introduction of IRAs underestimates existing assets of contributors because the population at large saves less than the smaller portion of the population that contributes to IRAs. To get an accurate measure of the existing assets of IRA contributors prior to the introduction of IRAs, the sample from which median wealth is measured must be restricted to the group of people who would save in IRAs.

- The definition of assets used by the optimists is too narrow. Including assets like home equity in the measurement of wealth shows a much higher rate of saving among IRA contributors and casts doubt on the claim that people did little saving prior to the introduction of IRAs.

- IRA contributions have been financed by reducing home equity or increasing mortgage debt.

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• The variation in IRA balances for households of similar age and income can be explained by factors other than the length of IRA eligibility.

This chapter presents the results of the author's review of the economic debate on IRAs' effectiveness in stimulating new saving. It concludes that the two estimates on the portion of IRAs that is new saving represent the extreme ends of the spectrum. The actual portion of new saving lies somewhere in the middle. While some of the evidence and methods used to calculate the optimistic estimate bias the findings upward, the adjustments called for by the pessimists are likewise overstated. The author agrees with Glenn Hubbard's and Jonathon Skinner's estimate that 26 percent of contributions are new saving.

B.   THE AMBIGUOUS IMPACT OF THE RATE OF RETURN

The belief that IRAs will stimulate new saving is based on the theory that the higher rate of return provided by the tax-deferred treatment of contributions and gains in the accounts will encourage people to substitute saving for consumption. That this occurs is far from certain. The higher rate of return over traditional saving vehicles affects the incentive to save for retirement in two offsetting ways which are known as the income and substitution effects. This section investigates these effects and the responsiveness of Americans to rates of return.

1.   The Income Effect

Because the tax treatment of IRAs makes the rate of return on assets in Individual Retirement Accounts higher than the rate of return on assets in traditional taxable saving vehicles, capital accrues more quickly in IRAs. If the investment amount is fixed, assets in an IRA will reach a target level more quickly than assets in taxable accounts. If the target balance and accumulation period are fixed, smaller contributions to IRAs yield the same balance as larger contributions to taxable accounts. The income effect, demonstrated in Figure 4.1, reduces the saving rate of individuals whose goal is to reach a target level of
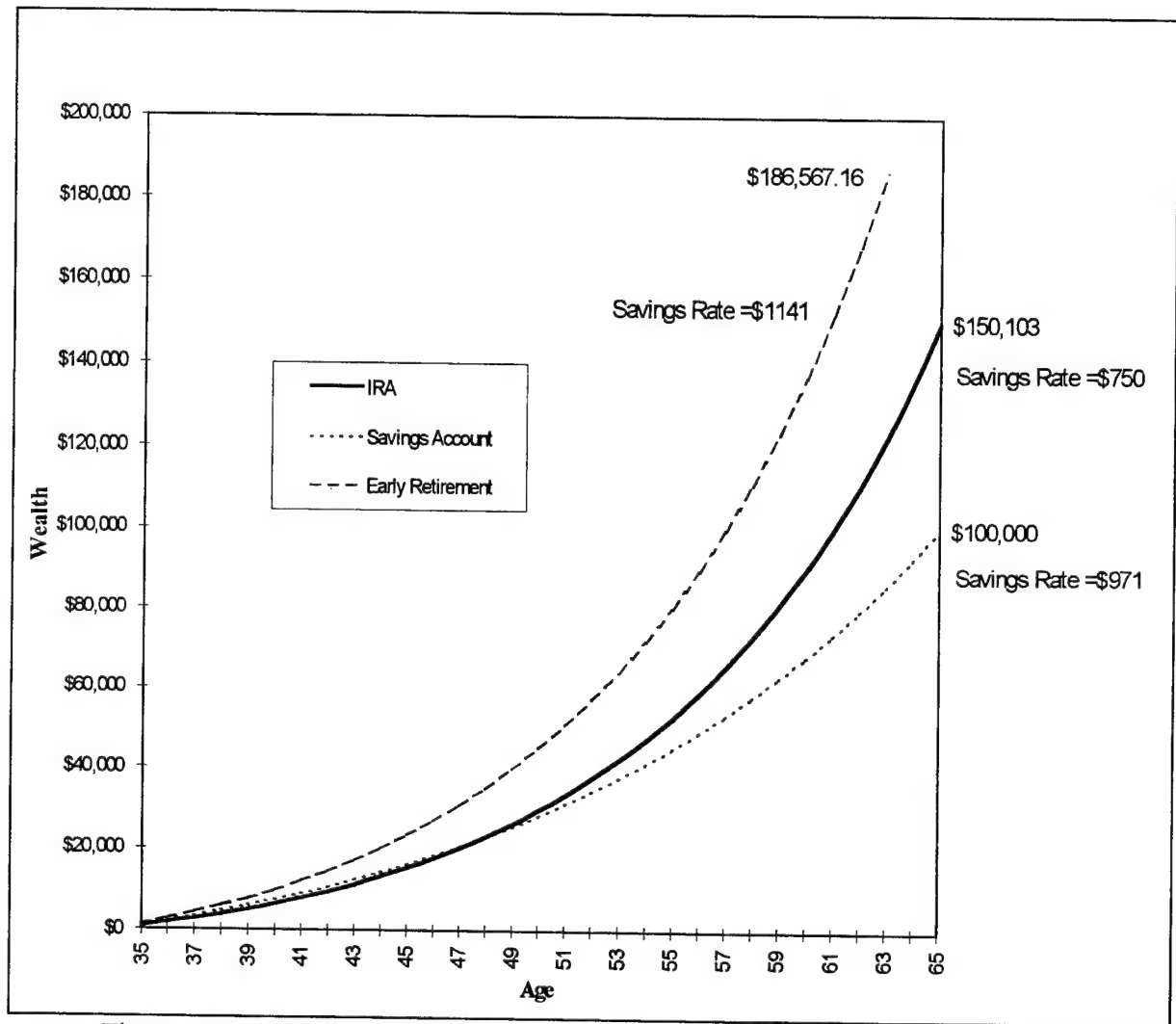
Figure 4.1 **Accumulation of Savings in IRAs Versus Taxable Accounts**

Adapted from Ippolito (1992)

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assets for retirement by a specific date. Assume two individuals begin saving for retirement at age 35 and intend to retire by age 65. Both face a constant marginal tax rate of 33 percent, and both want to accumulate $100,000 in post-tax assets by retirement. Assume the pre-tax rate of return is ten percent. The person with the IRA makes annual contributions of $750 and accumulates gains at an annual rate of 10 percent, since taxes on the gains are deferred. Over thirty years, the balance grows to $150,000 yielding $100,000 after taxes are paid on the entire balance at the time of withdrawal. Asset accumulation for this individual is shown by the IRA line. The person with the traditional savings account, who pays taxes on the gains in the year they are earned, accrues interest at a post-tax rate of 6.7 percent. The lower rate of return on the tax-exposed vehicle requires annual contributions of $971 to provide the same $100,000 in retirement assets. Asset accumulation for this person is shown by the **Savings Account** line. The income effect of the higher rate of return allows people to reduce their saving rate if their goal is to reach a specific dollar goal within a fixed time.

Note that although the saving rate and initial asset accumulation are lower for the IRA contributor, the accumulated assets exceed that of the taxable saving account after several years.

2.   The Substitution Effect

The income effect is not the only way that Individual Retirement Accounts alter saving behavior. These tax-deferred saving accounts provide an offsetting substitution effect resulting from their targeted purpose, which encourages people to save more. Retirement consumption is cheaper relative to current consumption, since assets dedicated to retirement via IRAs realize a higher rate of return than assets consumed immediately or saved for near term consumption. Thus, people will want to consume more of it. People increase retirement consumption by lengthening the retirement period through early separation, and by directing a higher proportion of lifetime assets to retirement consumption.

To demonstrate this effect on saving behavior, refer again to Figure 4.1. Faced with the lower relative cost of retirement, a third person decides to retire early at age 63, and to increase retirement consumption by 25 percent. This person makes annual contributions of $1141 and accumulates $186,567 by age 63, yielding post-tax assets of $125,000. Asset accumulation for this person is shown by the **Early Retirement** line. Under this scenario, the saving rate and account balances are higher for IRAs than for taxable saving accounts..

Individual Retirement Accounts have an ambiguous impact on saving behavior because of the offsetting nature of the income and substitution effects. The net effect depends upon which one dominates, and no evidence points clearly to the supremacy of either.

3. Responsiveness to the Rate of Return

The substitution effect implies that people increase their saving as the after-tax rate of return increases. Economic pessimists who believe that IRAs do not induce new saving argue that Americans are in fact unresponsive to the rate of return and hold their saving rate constant regardless of changes in the rate of return. The optimists who believe IRAs do stimulate additional saving appear to accept this contention, for they do little to refute it.

Michael Boskin demonstrated in 1978 that the studies showing a constant saving rate during periods of changing after-tax rate of returns are flawed, and he provided evidence that Americans do adjust their saving behavior in response to changes in the rate of return (Boskin, 1978.) Even if the average American does not change his saving behavior in response to changes in the rate of return, it does not follow that IRA contributors do not respond to an improved rate of return. IRA contributors are dissimilar to the average American in many ways, one of which is saving behavior. IRA contributors save much more than the average household, and it is plausible that they respond differently to the rate of return. Thus, IRAs may induce additional saving among the

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population of savers, regardless of the impact on the average American (Ozanne, 1992.).
If savers are more sensitive to rates of return, then IRAs may induce contributors whose
ideal allocation of saving to retirement accounts is some amount less than $2,000 to
contribute the annual maximum.

C.   DESCRIPTIVE ARGUMENTS ON THE IMPACT OF IRAS

Although economists disagree on many key issues, there are a substantial number
of basic concepts and principles which are commonly accepted. The parties to the debate
on the efficacy of IRAs have turned to these areas of common ground in an attempt to
determine how people will respond to a tax-favored saving program and to justify their
conclusions on the issue. Topics such as fungibility, marginal incentives, and response to
taxes have been employed in the debate. This section summarizes some of the arguments
based on the descriptive or theoretical evidence concerning the response of citizens to
IRAs.

Ultimately, the analysis based on the common principles of economics has been
inconclusive since neither side has developed an unassailable case that proves the impact
of IRAs on saving behavior. The arguments themselves are illuminating, however, and
warrant discussion because they describe how IRAs and personal saving decisions are
related.

1.   The Substitutability of IRAs for Other Forms of Saving

The hypothesis that IRAs are perfect substitutes for other forms of saving supports
the claim that IRA contributions come from existing assets or diverted savings. If this
theory is true, then savers will first deposit their money in IRAs because of the higher rate
of return. IRAs will not induce new savings for anyone who saves more than the annual
contribution limit because there is no marginal incentive to do so. If a contributor already
saves more than $2,000, then IRAs provide no marginal improvement in the rate of return
on additional saving, and will not encourage people to save more money. The income
effect dominates under the substitutability assumption, so IRAs may reduce saving

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because households can still reach their saving goal tomorrow while consuming more today.

Despite the ten percent penalty on withdrawals before age 59½, there are several reasons why IRAs may be perfect substitutes for other saving vehicles. First, contributors older than 59½ are not subject to the early withdrawal penalty. For these contributors, there should be no material difference between IRAs and taxable saving instruments, other than the rate of return. Second, persons with significant non-IRA financial assets are less likely to need their IRA money to meet immediate cash requirements. The ten percent penalty will not differentiate between IRAs and other savings vehicles if the contributor is unlikely to need the funds before age 59½. (Engen, Gale, and Sholz, 1996a and Gale and Scholz, 1992).

According to Eric Engen, William Gale, and John Karl Sholz (1996a), 70 percent of IRA saving in 1986 was done by people over 59 years of age who had non-IRA financial assets exceeding $20,000. This group of contributors should find IRAs good substitutes for other forms of saving and the impact on their net saving is probably small.

However, much evidence contradicts the theory of perfect substitutability. If IRAs were perfect substitutes for other saving vehicles, then every household with even one dollar in savings should have one, because of the higher rate of return. Yet only 25 percent of households own IRAs. Even among the prime candidates for IRA ownership, households aged 55 to 64 with income between $50,000 and $75,000, one third do not have accounts, despite the obvious tax advantage. Clearly a significant portion of the population does not treat IRAs as perfect substitutes for other saving vehicles. (Skinner, 1992.)

Some other anomalies suggest that people do not approach saving in the rational, rate-of-return maximizing manner that the perfect substitutability assumption requires. For example, some 401(k) account owners make IRA contributions even though they have not made their annual maximum 401(k) contribution. Since employer matching of employee contributions to 401(k) accounts increases the rate of return over IRAs, it

would be rational for workers to direct all retirement savings into 401(k)s up to the point where employer matching contributions cease. After the employer contribution cutoff point, the rates of return between IRAs and 401(k)s are identical. The fact that many workers contribute to IRAs when they are still eligible for employer matching of additional 401(k) contributions suggests that savings vehicles are not perfectly interchangeable and that people may not approach saving in a completely rational manner. (Poterba, Venti, and Wise, 1995)

The distribution of IRA deposits in a year also indicate a less than rational approach to saving. To fully realize the tax advantage, IRA holders should make their entire annual contribution on the first day of the tax year to maximize amount of time their funds will accrue tax-deferred interest, dividends, and capital gains. However, the bulk of IRA contributions are made immediately before the April 15 tax-filing deadline in the following year, foregoing 16 months of tax-deferred appreciation. Clearly, utilizing the tax advantage cannot be the only motivation for IRA contributions. (Venti and Wise, 1992.)

The assumption that all money is fungible lies at the heart of the substitutability theory. If IRAs are perfect substitutes for other saving vehicles, people must believe that a dollar in retirement saving is identical to a dollar in a child's college fund, which is equal to a dollar in a joint checking account. People must treat all these assets singularly as wealth, without differentiating between cash, home equity, stock holdings, pensions, or future Social Security benefits. If this is the case, then IRAs are likely to be effective substitutes for other saving. Richard Thaler (1992) believes this assumption is fundamentally flawed and attacks the substitutability theory at its foundation. He argues that the evidence does not support the assumption because people violate fungibility in systematic ways. He believes people use a system of mental accounting to divide assets into four general categories: current income, liquid assets, home equity, and future earnings. People do not treat these assets interchangeably, but designate certain funds for certain purposes, and vary their propensity to consume funds according to the purpose.

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For example, most people will readily spend money from a current income account like checking, but exercise more discretion before consuming liquid assets like saving account or mutual funds balances. They are far more cautious about spending home equity, and are unwilling, or unable, to consume future earnings like pension wealth or Social Security entitlements.

> This ordering of marginal propensities to consume follows the level of temptation associated with a positive balance in each account. Households need to exert willpower to resist spending their regular paycheck but find it easy to avoid spending the value of the home or income they will not see until many years later. (Thaler, 1992, p. 147.)

Fungibility means all assets are treated interchangeably, regardless of form, location, or timing. A simple example shows the inaccuracy of this assumption, at least in its most extreme form. If a person is saving her optimal amount and allocating assets across her lifecycle, setting aside a portion of her current income to pay for consumption in retirement, then an increase in pension benefits will reduce the amount of current saving required to fund retirement consumption. If her employer increased his contribution to her pension plan by one dollar, then she should reduce current discretionary saving by one dollar to maintain her ideal distribution of income across her lifetime. Not only does common sense tell us that people do not behave this way, but also empirical evidence[12] shows that an increase in future pension benefits does not increase current consumption. (Thaler, 1992, p. 148.)

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[12] In a detailed article published in *Economic Inquiry*, Thaler and Shefrin cite studies by Philip Cagan (1965), George Katona (1965), Francis Green (1981), Mordecai Kurz (1981), M.A. King and L.D.L. Dicks-Mireaux (1982), and Peter Diamond and Jerry Hausman (1984). These studies showed that the reduction in descretionary saving resulting from an increase in pension saving was uniformly and substantially less than 100 percent of the change in pension saving. Several of the studies showed that an increase in pension saving increased discretionary saving as well. Although the estimate of the change in saving behavior varied between the studies, none provided evidence that people reduce discretionary savings by significant amounts in response to an increase in pension saving.

The fact that people identify savings for specific purposes also contradicts the fungibility assumption. Many people save money for specific purposes such as a down payment on a house or new car, next summer's vacation, or a child's education. Any unwillingness to transfer money between these accounts violates the fungibility assumption. Consumer debt also contradicts it. A person who maintains a balance on a credit card charging 18 percent annual interest while having cash in a savings account earning five percent interest is not treating money as fungible.

This argument that many people do not treat money as fungible has several implications for IRAs. First it suggests that people do not treat savings for retirement and savings for near term consumption interchangeably, so that an increase in retirement saving does not necessarily reduce other saving. Second, the elements of IRAs aimed at encouraging new saving are likely to be effective in the context of mental accounts. The immediate reward of a tax deduction for contributions, combined with the fact that the funds are out of arms reach should encourage new saving and keep assets in the capital pool.

While some substitution undoubtedly occurs, IRAs are clearly not perfect substitutes for other savings. The evidence shows that people do not approach IRA saving in the rational, return-maximizing manner that the perfect substitution assumption demands. If IRAs are imperfect substitutes for other saving, then at least some portion of contributions must be new saving. Even the portion of IRAs that are redirected assets may increase net savings, as Thaler's argument on mental accounting suggests. Funds in a traditional saving vehicle may be withdrawn at any time after they are deposited. IRA contributions, on the other hand, will remain in the capital pool longer due to the penalty on early withdrawals and the reduced propensity of savers to spend money intended for retirement. Thus, regardless of the contribution source, IRAs should maintain savings for longer periods than other forms of savings.

2. The Marginal Effect of the Contribution Limit

Some economists who believe that IRAs will not stimulate additional saving argue that the higher rate of return provided by IRAs will induce contributors to increase their saving only if the accounts provide an increased rate of return on marginal saving. For example, consider a person who saves $1,500 dollars a year in a traditional savings vehicle yielding an annual return of ten percent before taxes and seven percent after tax, assuming a 30 percent tax rate. This person can increase her annual rate of return on that savings to ten percent by depositing the money in an IRA. The IRA also increases by three percentage points the incentive for her to save more than $1,500 because her current annual saving is below the contribution limit. Thus, an IRA increases her marginal incentive to save more than $1,500 and should raise her saving. Now consider a person already saving $2,000 annually in a taxable savings account. He too can increase his return to ten percent by depositing his money in an IRA. However, if he is contemplating a $1 increase in saving, his rate of return on the additional dollar will be only seven percent, the same return without the IRA. The higher rate of return on saving is no longer available because this person has reached his annual contribution limit and additional saving must be deposited in a taxable savings account. Thus, for anyone contributing at or above the limit, IRAs offer no marginal incentive to increase saving.

Economists Bermann, Cordes, and Ozanne assume only the marginal rate of return matters and conclude that IRAs will not significantly increase net savings because approximately 75 percent of annual contributions are limit contributions. For limit contributors, IRAs provide no marginal incentive to save more. (Hubbard and Skinner, 1996.)

This oversimplifies the effect of the limit, however. When examining marginal incentives to save, lifetime limits are more relevant to the issue than annual limits. Even if the percentage of annual contributions that are at the limit remains constant, the size of each individual's contribution may change from year to year. A person who contributes to the limit in one year but not in the next has a marginal, if unused, incentive to save. Data

from the Survey of Consumer Finances (SCF) between 1983 to 1986 showed that only 30 percent of contributors made limit contributions in each of three years. Thus, 70 percent of contributors had some marginal incentive to save over a three-year period. (Hubbard and Skinner, 1996.)

Their conclusion also ignores the effect of the limit itself on saving behavior. The author believes that the $2,000 annual limit encourages people to contribute exactly this amount for several reasons. First, by saving less than the annual limit, the contributor forfeits some part of the tax reduction. The failed experiment with tax shelters in the 1970s proved that people will go to great lengths to avoid taxes. The tax breaks which were implemented in 1973 and eliminated (or at least severely restricted) in 1986 were designed to encourage investment in farming, real estate, motion pictures, and oil and gas. Instead, they siphoned off capital from productive investments into tax avoidance schemes that frequently crossed the line separating creative tax avoidance and outright tax fraud. People invested money in chinchilla farms, jojoba bean plantations, desert real estate, buffalo ranches, movies that would never be seen by a paying audience, hollow office buildings, and dry oil wells. Many taxpayers lost not only their investment, but the value of the deduction and more when the IRS disallowed their claim, slapping them with back taxes and penalties. Some schemes such as a plan to purchase bibles at a discount and then deduct them at several times their retail value after donating them to missionaries resulted in jail time for the perpetrators. The point is that people will take extreme measures to reduce their taxes, and thus it requires little imagination to believe that savers would make limit contributions for the sole purpose of reducing their taxes by the maximum amount allowed by law. (Graetz, 1997.)

Additionally, $2,000 is a reasonable annual savings target, and is well within reach for most households that save. Also, people like to deal in round numbers. The author believes that these factors will induce savers to contribute to the limit, even though their ideal allocation of saving to retirement might be lower than $2,000.

Another flaw with the limit contribution theory is it assumes all saving is identical. It holds that a person whose ideal level of total savings is $10,000 will increase retirement saving in response to the higher rate of return, but reduce other saving so that net saving remains at $10,000. However, Richard Thaler's work on mental accounting suggests that people compartmentalize their saving and do not treat money fungibly. If this is the case, then the marginal incentive to save in an IRA may encourage people to increase retirement saving without reducing other saving. (Hubbard and Skinner, 1996) and (Venti and Wise, 1992)

Steven Venti and David Wise discount the claim that only the marginal incentive matters by comparing contributor participation in front-loaded and back-loaded IRAs. U.S. "front-loaded" IRAs allow immediate deductibility of contributions, but tax all withdrawals as regular income. The United Kingdom's "back-loaded" Personal Equity Plan (PEP) allows after tax contributions, but levies no taxes on withdrawals. If the tax rate during the contribution and withdrawal periods is the same then there is no difference in the rate of return between the two plans. However, the U.S. plan, with its immediate tax deduction, has been much more effective in attracting contributions than the U.K.'s back-loaded plan, indicating some factor other than the rate of return can affect saving behavior.

The response of households to the Tax Reform Act of 1986, which eliminated contribution deductibility for households with employer-provided pensions and incomes over certain thresholds, is also inconsistent with the claim that only the marginal rate of return matters. Although the up-front deduction was eliminated for some tax payers, tax-deferred compounding was still available for everyone. Despite the fact that IRAs still offered a higher rate of return, the number of households making contributions declined dramatically after 1986. In fact, while the deduction was completely eliminated for only 15 percent of the contributors in 1985 and partially eliminated for another 12 percent, the dollar value of deductions dropped by 63 percent, and the number of tax returns claiming IRA contributions fell approximately 57 percent from 1986 to 1987 (EBRI, 1986.) This

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reaction suggests that IRA saving behavior was affected by the immediate tax break in addition to the rate of return. (Venti and Wise, 1992.) Apparently the saving decisions of many households are not consistent with the calculating rationality that the marginal rate of return assumption implies.

3.   Funding IRA Contributions With Home Equity

Households may engage in a more subtle form of asset shifting by decreasing home equity while increasing IRA assets. To the extent that this occurs, IRAs do not increase net wealth, but only change the composition of household wealth.

Engen, Gale, and Scholz contend that the failure to include home equity in the measurement of household wealth overstates the importance of IRAs in net wealth, underestimates prior saving behavior, and biases research in favor of finding that IRAs increase saving. They claim that the traditional measure of wealth in terms of financial assets dramatically understates the total assets of most households. In 1983, IRA contributors had a median value of financial assets of $12,075, but a median value of financial assets plus housing equity of $51,220. This higher measure of wealth compromises the claim that households did little saving prior to 1983 and shows that excluding home equity from wealth ignores household saving in the form of downpayments and the repayment of mortgage principal. The larger value of financial assets plus housing equity also casts doubt on the assumption that contributors did not have sufficient assets in 1983 to fund the growth in IRA assets during subsequent years. (Engen, Gale, and Scholz, 1996a.)

According to Engen, Gale, and Sholz, (1996a, and 1996b) IRAs can plausibly substitute for housing equity because both are long term, illiquid saving vehicles. Substitution can occur in several ways. Households can extract equity while refinancing their homes, take out home-equity lines of credit, or redirect money into IRAs that would otherwise have been used to accelerate mortgage payments. Engen, Gale, and Sholz also consider the decision to save in IRAs instead of buying a larger home to be a form of

substitution. The author disagrees with this contention, and believes instead that such a decision is foregone consumption, not redirected saving.

Lawrence Kotlikoff (1992) suggests that IRA contributors engage in tax arbitrage by borrowing money against home equity, the interest on which is tax-deductible, to finance tax-advantaged contributions to IRAs. Such machinations yield a tax windfall for households, without increasing net private savings, while simultaneously reducing net national savings if the reduction in personal income tax revenue is financed with more government debt. Although the arbitrage theory is plausible, Kotlikoff readily admits that he has no empirical evidence that it occurs.

Engen and Gale find evidence that contributors did shift wealth from housing equity to IRA assets. Between 1987 and 1991, households with IRAs substantially increased their financial assets, but net wealth was unchanged because mortgage debt rose more quickly (Engen, Gale, and Scholz 1996a.) However, they also present evidence that contradicts this finding. Examining data from the 1986 SCF they found that between 1983 and 1986, median financial assets of IRA holders increased from $10,200 to $21,500 in nominal dollars. During this same period, median housing equity for the group increased from $39,398 to $45,169. Adjusting for inflation, median housing equity rose 4.2 percent while median financial assets rose 92 percent. Thus, their own findings discredit the claim that IRA holders financed contributions by reducing home equity. Unfortunately for the strength of their case against new saving, they neither recognize nor address the disparity.

Lower housing equity does not mean that IRA contributions were financed with mortgage debt, according to Poterba, Venti, and Wise (1996), who argue that the decline was caused by lower home prices in the late 1980s. Mortgage debt increased in response to the Tax Reform Act of 1986, which eliminated the deduction for interest paid on consumer debt, encouraging people to transfer debt from credit cards and signature loans to tax-advantaged borrowing like home equity lines of credit. They fail to find evidence that changes in mortgage debt were directly related to changes in IRA assets; in fact they found the opposite to be true. Mortgage debt fell during the early 1980s while IRA

contributions and balances rose rapidly, then increased as IRA contributions declined after the 1986 Tax Reform Act.

Other economists who have studied the relationship between home equity and other assets also found little correlation between them. Although the tax arbitrage theory sounds very plausible, not much empirical evidence has been presented to support it. It also assumes that households treat housing equity and financial assets as fungible, which may not be valid. The author concludes that while some households may finance IRA contributions by borrowing against home equity, the net effect of this behavior is not large. Households may use this tactic to make the annual contribution in some years when cash is short, but it probably does not occur over the long term within a given household.

4.   The Psychological Effects of IRAs

Much of the research on the impact of IRAs on saving behavior and net wealth is based on the assumption that individuals behave rationally, make return-maximizing decisions, and allocate total income over their lifetime based on sound estimates of consumption needs during the retirement and pre-retirement periods. Ample evidence suggests this assumption may not apply to some, or even most people. Recognizing this possibility, several economists have focused on the psychological effects of IRAs on individual decisions and saving behavior to assess the impact of these tax-deferred savings vehicles.

Richard Thaler (1992) argues that households are not perfectly rational decision makers, but are instead, imperfect creatures who struggle to exercise the self-control required for disciplined saving. Saving money requires that people identify a future need and exercise the self control to forego immediate gratification through consumption. IRAs help people accomplish both; highlighting the need to save for retirement and reinforcing the self-discipline required to deposit and retain money in retirement accounts.

Banks and other financial institutions aggressively advertised IRAs during the early 1980s, significantly increasing awareness of the need to save for retirement. Promotional

efforts may have increased contributions by emphasizing the need while simultaneously providing a vehicle in which to save for retirement. Many advertisements appealed to bargain-seeking behavior by highlighting the superior rate of return afforded by tax-deferred compounding. Multi-color graphs showing IRA balances rising steeply higher than traditional savings account balances were a ubiquitous feature in marketing literature.

There is some empirical evidence suggesting that promotion played a significant role in attracting IRA contributions. Between 1981 and 1986, anyone with income could make tax-deductible contributions to IRAs, and banks actively courted this market. During this period, the number of tax returns with IRA contributions grew from three million in 1981 to 16 million in 1986; annual contributions increased from $5 billion to $39 billion during the same period. When the Tax Reform Act of 1986 restricted the number of households eligible to deduct contributions, marketing of IRAs by financial institutions fell off precipitously. By 1987 only seven million households made IRA contributions totaling $14 billion. Even though the change eliminated the deduction for only 15 percent of contributors and partially eliminated it for another 12 percent, deductions dropped by 63 percent. The decline in advertising of IRAs along with the misunderstanding on the part of many households that they were no longer eligible to contribute explains much of this overreaction. (Venti and Wise, 1992.)

If people designate different modes of saving for distinct purposes, in effect treating them as distinct goods, then successful promotions of IRAs may have magnified or created a distinction between them and other forms of saving. To the extent that advertising emphasized such distinctions, it reduced the substitution of IRAs for other forms of saving.

The structure of tax-deferred savings accounts has a psychological affect which encourages real people to make contributions. Two features of IRAs encourage saving for retirement. First, the accounts offer an immediate reward in the form of a tax deduction, and second, they put the money off limits by penalizing premature withdrawals. The ten percent penalty on withdrawals prior to age 59½ is particularly important in

reinforcing self-discipline since it imposes both economic and psychological costs on backsliding. (Thaler, 1992.)

The timing of IRA contributions within the year highlights the importance of the tax deduction for household saving decisions. Feenberg and Skinner (1989) point out that approximately 40 percent of IRA contributions for a given year are made during the following calendar year, prior to the tax-filing deadline. They conclude that many households would rather deposit money in IRAs than write a check to the IRS. Eleventh hour contributions, which miss out on 16 months of tax-deferred compounding, indicate that the tax deduction may be a more significant factor than the rate of return in motivating the contributions.

Skeptics agree that evidence on the psychological impact of IRAs may indicate people are affected by factors other than the marginal rate of return, but counter that such evidence does not prove IRA contributions are new saving. April 14th contributions increase saving if households skip the summer vacation to raise the cash, but do not affect net wealth (aside from the tax reduction) if the funds are transferred from the existing assets. Additionally, the success of aggressive IRA marketing efforts in attracting contributions, may reflect changes in asset composition rather than asset magnitude. (Gale and Scholz, 1992.)

The author concludes that the psychological aspects of IRAs significantly affect household saving decisions. The evidence that the upfront tax-deduction and early withdrawal penalty motivates households to make and retain IRA contributions seems quite compelling. Aggressive promotion not only attracted many contributions, but differentiated IRAs from traditional saving accounts, further undermining the theory that people treat them as substitutes. Finally, the evidence on the timing of contributions rebuts the assumption that the marginal incentive to save and the rate of return are the only criteria that matter for saving decisions.

D.   EMPIRICAL EVIDENCE ON THE IMPACT OF IRAS ON SAVING

Since the theoretical arguments failed to settle the disagreement over the magnitude and direction of the affect of IRAs on net national saving, economists have turned to empirical methods for answers. Using various survey data, they have tried to measure the change in saving that can be attributed to IRAs. This is a difficult task. Positive account balances do not prove that IRAs induce new saving, since balances will increase whether the contributions come from foregone consumption or shifting existing assets. To determine the effect of IRAs on saving behavior, economists must determine how contributors would behave in the absence of IRAs. It is misleading to compare the assets of contributors to the assets of people without IRAs because the difference in capital accumulation can be explained by different saving preferences between the two groups. IRA ownership indicates a preference for saving, and savers accumulate more assets in all forms relative to non-savers. Using the assets of households without IRAs to infer the behavior of the entire population in the absence of the accounts will bias the results in favor of finding new savings (Engen, Gale, and Scholz, 1996a.)

However, dividing the population into contributors and non-contributors, then examining their behavior at given points in time also presents problems since membership in either group is not fixed over time. Migration of households between groups alters the aggregate savings behavior within each group over time. Thus, there is some advantage to examining the behavior of the population without regard to contributor status (Poterba, Venti, and Wise, 1996.)

Because of these complexities, researchers use various approaches to evaluate the change in savings behavior caused by IRAs. They may follow the same individual or household over time, analyzing changes between periods. They can compare the behavior or assets of two or more groups at a particular point in time, while controlling for a certain trait or demographic feature. They can also compare data on groups that reach the same age during different calendar years to evaluate a change over time while controlling for age. Economists use data from several sources to support their arguments. Not

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surprisingly, data from the same source is frequently used to both support and attack a particular theory. Economists have used data from the Survey of Consumer Finances, the Consumer Expenditure Survey (CES), and the Survey of Income and Program Participation (SIPP), among others, to bolster their cases. This section summarizes the arguments based on this empirical evidence.

1.   The Change in Saving Behavior

To support their contention that IRAs motivated additional saving, Poterba, Venti, and Wise compare the assets of households before IRAs to their assets afterward. They take data from 1980, the period before IRAs were available to most people, and compare it to data from 1986, when IRAs had been widely available for four years. They control for differences in savings behavior by restricting the 1980 sample to "contributor-like" households.

Venti and Wise used the following procedure to develop the mean financial assets of the contributor-like households. Hypothetical figures are used to illustrate the process. First, they divided the households in the 1986 Survey of Income and Program Participation into 16 age-income categories. Then they counted the number of respondent households within each category that contributed to IRAs in 1986 and calculated the mean finacial assets of the contributing households. Assume for example that 30 percent of the households in the 1986 SIPP aged 55 to 65 earning $30,000 to $39,999 contributed to IRAs, and the mean financial assets of these contributors was $10,000. They believed that they could use the percentage of contributing households to predict the percentage of households within each age-income category that would have contributed to IRAs in an earlier year. Thus, they randomly selected 30 percent of the households who fell in this same age-income category in the 1980 SIPP. This process was repeated for each age-income category to develop the contributor-like group for 1980.

Venti and Wise realized that a selectivity bias affected the value of the mean financial assets of the observed contributors to IRAs. Those households that actually

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contributed to IRAs have a preference for saving, and tended to save more money in all forms than households that did not contribute to IRAs. Since a random sample of an equal proportion of households from the same age-income category would undoubtedly select some households that did not contibute to IRAs, they expected the mean financial assets of the predicted group of contributor-like households to be lower than that of the observed group. To determine the magnitude of the relationship between the financial assets of the predicted IRA contributors to the actual IRA contributors, they randomly selected an equal proportion of households from the same age-income category from the 1986 SIPP and measured their mean financial assets. Using our example again, assume 30 percent of the households in the 1986 SIPP aged 55 to 65 earning $30,000 to $39,999 contributed to IRAs. By randomly selected 30 percent of the households in the 1986 SIPP from this same age-income category, Venti and Wise developed the predicted group of IRA contributors, then they calculated the mean financial assets for the predicted group. Assume they found the predicted group had $5,000 in financial assets per household, compared to $10,000 per household for the actual contributors. This meant that there was a two-to-one ratio of mean financial assets for the actual IRA contributors to the predicted IRA contributors within this age-income category.

Venti and Wise used the percentages for each age-income group to develop the predicted contributors from the 1980 SIPP, then applied the ratio of the assets of observed contibutors to predicted contributors to adjust for the individual saving effect described above. Continuing our example, they randomly selected 30 percent of the households in the 1980 SIPP aged 55 to 65 with incomes (adjusted for inflation) between $30,000 and $39,999, and calculated the mean financial assets for this group. Then they applied the ratio of observed contributor assets to predicted contributor assets to correct for the selectivity bias. Assume that the predicted group in 1980 had mean financial assets of $1,500. Applying the ratio, the adjusted mean financial assets of the contributor-like group would be $3,000. This process was completed for all 16 age-income categories to

determine the mean financial assets for the entire contributor-like group in the 1980 SIPP. (Venti and Wise, 1992.)

By comparing the assets of people with IRAs in 1986 to the assets of people who they predict would have owned IRAs in 1980 if they had been available, Poterba, Venti, and Wise hoped to reveal the effect of IRAs on savings behavior. Table 4.1 shows the results.

Table 4.1 **Financial Assets of "Contributor Like" Groups, 1980 and 1986**
(Excluding Stocks and Bonds)

Contributor Status and Asset	Respondents In 1980	Respondents In 1986	Percentage Change
Contributor-Like			
Non-IRA assets	4,635	7,816	68.6
IRA assets	0	7,800	----
Total assets	4,635	17,900	286.2
Non-Contributor-Like			
Total assets	508	752	48.0

Source: Venti and Wise (1992, p. 19.)

Comparing the assets of contributor-like households between the two periods indicates a change in saving behavior. In 1980, median non-IRA financial assets of contributor-like households were $4,635; median IRA assets were near zero. By 1986, median IRA assets rose to $7,800 and non-IRA financial assets rose to $7,816. Total financial assets reached $17,900, a 286 percent increase over six years. Clearly, the households in the sample saved much more after IRAs were introduced than before. Two findings discredit the argument that IRA contributions were funded by shifting assets from existing accounts. First, the difference in IRA account balances between 1980 and 1986 was greater than the median assets held by contributor-like respondents in 1980, indicating contributors possessed insufficient assets in 1980 to fund actual contributions between 1982 and 1986. Second, non-IRA financial assets did not fall during this period, as the shifting theory predicts. In fact, they rose by 68.6 percent. If contributors were shifting

assets, account balances should have decreased as IRA balances increased. (Venti and Wise, 1992.)

Venti and Wise discount some other explanations for the growth of assets during this period. They point out that nominal income growth of 48 percent does not explain the rise in financial assets among IRA contributors, but add that it does explain the growth in assets of non-contributors. They also contend that most savers do not hold their financial assets in stocks, so stock market growth is not a explanation for the increase. Including stocks and bonds in the calculations yields slightly lower asset growth rates than shown in Table 4.1, which excludes them.

Engen, Gale, and Scholz challenge the Venti and Wise findings on the following grounds. Financial assets alone are inadequate measures of wealth. Contributors held substantial amounts of housing equity, which, when included, result in much higher values of median wealth. Using data from the 1983 and 1986 SCF (also used by Venti and Wise to support their findings above) the median value of net financial assets plus home equity was $51,220 for IRA contributors in 1983 and grew to $64,897 by 1986, contradicting the claim that these families did little saving before IRAs were introduced. (Engen, Gale, and Scholz, 1996a.)

Engen, Gale, and Scholz offer the following explanation for the increase in net wealth. The initial wealth level would plausibly have grown by 6 percent per year in nominal terms from 1983 to 1986. This alone would have resulted in median 1986 wealth of $61,000. If the median family had made additional contributions of $1,200 per year (plus accumulated interest), it would have attained the actual median 1986 wealth level. If a conservative 20 percent tax rate adjustment is made for the fact that $6,000 of the 1986 wealth was accumulated with tax deductible IRAs, new saving of less than $900 per year would have been sufficient to generate the 1986 wealth level. (Engen, Gale, and Scholz, 1996a, p. 32-33.)

They conclude it is plausible to assume annual savings of $900 would have occurred anyway since the median IRA contributor was 42 in 1983 and had financial assets plus housing equity of $51,220.[13]

2.   Cohort Analysis

To support the conclusion that IRAs induce new saving, Venti and Wise (1996) offer the following hypothesis: If IRAs increase saving, then a household with more time to contribute money to one will accumulate greater retirement savings and net financial assets relative to an identical household with less time to contribute. If IRAs do not stimulate saving, then increased exposure to IRAs should not affect the level of household wealth. This theory can be tested by comparing the retirement assets of two people who reach the same age in different calendar years. For example, a person who is 50 years old in 1984 had two years to save money in an IRA before his 50th birthday, assuming he could not contribute to one until they became widely available in 1982. A person aged 50 in 1987 had five years to contribute to an IRA before his 50th birthday. If IRAs do stimulate new saving, then the 50 year old in 1987 should have more in total financial assets than the 50 year old in 1984.

Rather than compare the assets of two individuals, Venti and Wise measure the mean assets of random samples of respondents to the Survey of Income and Program Participation. They use cohorts[14] of people in a five-year age window in a given year, comparing the mean retirement assets (IRA plus 401(k) balances) of people who were in a given age range in one year to the mean retirement assets of a random sample of people who were in this same age range, but in a different year. They develop cohorts of sample respondents in 15 separate five-year age ranges and calculate the mean retirement assets of

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[13] Included in this broader measure of wealth are the cash value of life insurance, trusts, managed investment accounts, and land contracts. Poterba, Venti, and Wise contend that the broader measure is overstated, because these assets are highly unlikely sources for IRA contributions.

[14] A cohort is defined as a group of people born in the same year or range of years. A cohort can also be all the people of the same age in a given year.

each cohort for each year from 1984 to 1991. A subset of these cohorts and mean assets is shown in Table 4.2. The columns show the results for a subset of the cohorts for 1984, 1986, and 1990. Each cell shows the age range of a particular cohort in the designated year, along with the mean retirement assets for the cohort in that year. The increase in retirement savings, which Venti and Wise believe are caused by longer periods of IRA eligibility, is shown by comparing the value of mean retirement savings for a cohort that reached a given age range in year, along with the mean retirement assets for the cohort in that year. The one year to another cohort that reached the same age range in a later year. For example compare the two cells shown in bold in Table 4.2.

The cell in the column on the left shows the mean retirement assets for the cohort that reached ages 54 to 58 in 1984. These people had approximately two years to save money in IRAs and 401(k)s before reaching this age. The cohort that reached this age in 1990, shown in the column on the right, had approximately eight years to save money in IRAs and 401(k)s, and accumulated almost $10,000 more in retirement savings.

Venti and Wise feel they adequately control for any unobserved heterogeneity between the comparison groups, since the cohorts are random samples of SIPP respondents in each year, rather than the same individuals or households examined over several years. Since the sample of 58 to 62 year olds in 1984 was randomly selected, it is unlikely that they differ in some systematic way from the randomly selected sample of 58 to 62 year olds in 1991. In examining their findings, they also restrict comparison to households with the same income, marital status, and education.

Venti and Wise believe that the cohorts developed in this manner are similar in all respects except for the length of time they had to contribute to IRAs (Venti and Wise, 1996). If this assumption is valid, and if IRAs effectively raise savings, then a cohort that reaches a specified age in an earlier calendar year will have saved less money than a cohort that reaches the same age in a later calendar year due to shorter exposure to IRAs. For example, the cohort aged 60 to 64 in 1984 had two years to accumulate assets in IRAs

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Table 4.2 **Selected Cohorts and Mean Retirement Savings: 1984, 1986, 1990**

Cohort Designator	Age and <u>Mean Retirement Assets</u> In:		
	1984	1986	1990
C42	40 - 44 <u>$1,509</u>	42 - 46 <u>$4,343</u>	46 - 50 <u>$10,369</u>
C46	44 - 48 <u>$1,825</u>	46 - 50 <u>$4,528</u>	50 - 54 <u>$11,694</u>
3C50	48 - 52 <u>$1,983</u>	50 - 54 <u>$5,740</u>	**54 - 58** <u>**$12,030**</u>
C56	**54 - 58** <u>**$2,849**</u>	56 - 60 <u>$6,702</u>	60 - 64 <u>$15,130</u>
C60	58 - 62 <u>$4,275</u>	60 - 64 <u>$8,108</u>	64 - 68 <u>$10,820</u>
C62	60 - 64 <u>$4,272</u>	62 - 66 <u>$8,467</u>	66 - 70 <u>$10,612</u>
C66	64 - 68 <u>$3,262</u>	66 - 70 <u>$6,328</u>	70 - 74 <u>$7,565</u>
C70	68 - 72 <u>$1,608</u>	70 - 74 <u>$2,036</u>	74 - 78 <u>$3,204</u>

Adapted from (Venti and Wise, 1996)

before they reached the specified age, while the cohort aged 60 to 64 in 1987 had five years, and the cohort that reached this age in 1991 had nine years. They find that families reaching a specified age in later calendar years had larger assets than families reaching that age in earlier calendar and conclude that IRAs result in new saving. For example, the cells in bold in Table 4.2 show the dramatic difference between financial assets of the cohort that reached age 54 to 58 in 1984 and the cohort that reached the same age in 1990.

The results for the 60-to-64 year-old cohort analysis are shown in Table 4.3. It compares the assets of sample households that reached ages 60 to 64 in 1984 to the assets of sample households that reached this age range in 1991. The households with nine years to contribute to IRAs or 401(k)s by age 60 to 64 accumulated significantly higher retirement and total assets than the households with only two years to contribute. The difference in total financial assets between the two cohorts is accounted for by the difference in retirement assets. The slightly lower value of non-retirement assets for the 1991 cohort demonstrates two things. First, non-retirement assets did not decline enough to offset the growth in retirement assets, indicating the younger cohorts did not finance their retirement savings by shifting assets. Second, whatever caused the large difference in retirement savings between the two cohorts did not similarly affect non-retirement savings.

Table 4.3 **Comparison of Retirement and Financial Assets of the Age 60 to 64 Cohort** (In 1991 dollars)

Households Aged 60 - 64 in Year:	1984	1991	Difference
Households with IRAs or 401(k)s [a]			
Retirement Assets	8,171	22,148	13,977
Other Financial Assets	22,983	21,528	-1,455
Total Financial Assets	34,975	50,182	15,207
Households without IRAs or 401(k)s [b]			
Total Financial Assets	2,687	2,134	-533
All Households [b]			
Retirement Assets	5,118	14,156	9,038
Other Financial Assets	37,132	36,263	-869
Total Financial Assets	42,250	50,419	8,169

Source: Poterba, Venti, and Wise (1996)

[a](Median values)
[b](Mean values)

Whether we examine all households, or only those households with IRAs or 401(k)s, the lesson remains the same. The cohorts with longer exposure to tax-deferred retirement saving vehicles accumulated more financial assets than the cohorts with shorter exposure. When median asset levels are evaluated for all households regardless of IRA ownership, the difference in total assets is entirely accounted for by the increase in retirement assets.

Figure 4.2 graphically displays the difference in retirement savings for several other cohorts reaching a specified age in the year indicated. For each pair, the column on the left shows the level of retirement savings for the cohort with that median age in 1984. The column on the right shows the retirement savings for the cohort reaching the same age in 1991. The younger cohorts, with seven more years to accumulate assets in retirement accounts show significantly higher levels of retirement savings than their older counterparts.
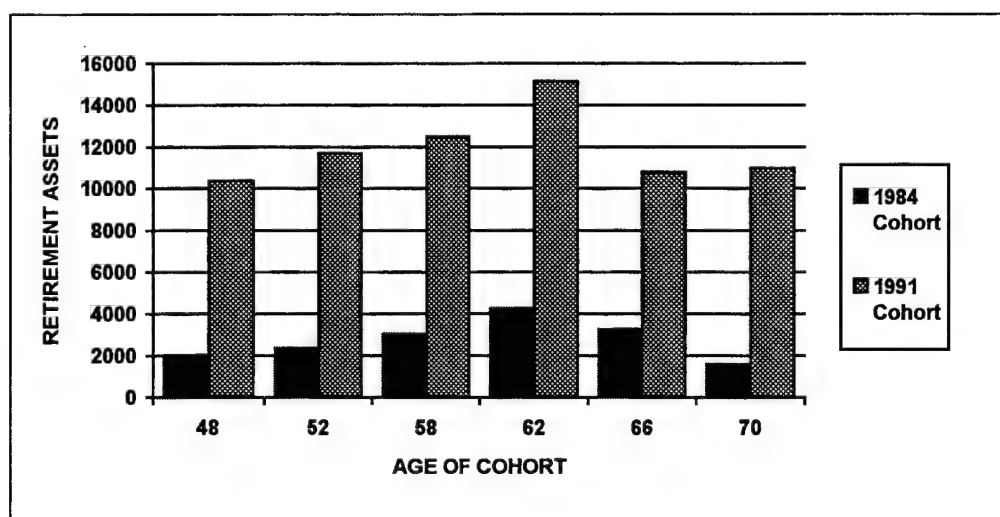

Figure 4.2 **Comparison of Retirement Savings Between Cohorts; 1984 and 1991**

Source: After Venti, and Wise (1996)

Venti, and Wise (1996) refer to the difference in assets of cohorts reaching the same age in different calendar years as "cohort effects." They note there is no similar cohort effect observed among non-retirement financial assets of the cohorts. The cohort

aged 66 to 72 in 1984 had the lowest level of retirement savings, which is expected since this group was already past the normal retirement age in 1982 and had little opportunity to save money in tax-deferred retirement-savings vehicles.

The data above show the cohort effects of IRAs and 401(k)s combined, but Poterba, Venti, and Wise (1996) also demonstrate that the conclusions are valid for IRAs alone. Comparing the assets from demographically similar households with IRAs who were not eligible for 401(k)s, they found median financial assets grew from $20,686 in 1984 to $27,094 in 1991. During this same period non-IRA assets were relatively constant, rising from $13,309 in 1984 to $13,335 in 1991.

The evidence on the changing assets of cohorts as the period of IRA eligibility increases supports the theory that IRAs stimulate new savings. Among demographically and statistically similar groups, there was a marked rise in total financial assets, caused by growth in retirement savings, as IRA exposure increased. The evidence fails to support the shifting theory since no offsetting reduction in non-IRA financial assets was observed.

Engen, Gale, and Scholz (1996b) contend that cohort analysis is based on the heroic assumption that the only difference between the various cohorts was the length of time they had to contribute money to IRAs. They argue that there are several other key differences between the cohorts such as the stock market boom, higher real interest rates, shifts in non-financial assets, higher debt, bias caused by comparing pre-tax balances to post-tax balances, and omitted 401(k) and thrift savings plan data, provide plausible explanations for the growth in financial assets observed by Poterba, Venti, and Wise.

Referring to Table 4.3, Engen, Gale and Scholz argue that much of the $8,169 difference in mean financial assets between all households in the two cohorts can be explained by the difference in stock market returns that each cohort experienced. Consider the two cohorts shown in Table 4.1. Since seven years separate the two cohorts, it is appropriate to compare stock market appreciation during the seven years before each cohort reached the specified age. During the seven years before the older cohort reached 60 to 64 (1977 to 1984) the Standard and Poor's 500 Index declined five percent. During the seven years that preceded the younger cohorts attainment of the same age (1984 to 1991), the index rose 78 percent. Engen, Gale and Scholz calculate the mean 1984 stock

and mutual fund holdings of the younger cohort in both taxable and tax-deferred accounts at $7150. An increase of 78 percent would raise the value to $12,727 in 1991. If they experienced the same five percent decrease over seven years as the older cohort, their stock would instead be worth $6,800 in 1991[15], a difference of $5,927. This accounts for 72 percent of the difference in financial assets between the two cohorts. (Engen, Gale, and Scholz, 1996b. p. 122-123.)

Another explanation for the apparent increase in financial assets is supplied by the decrease in both interest rates and marginal tax rates during the period. The decline in interest rates reduced mortgage costs, freeing up more money for investing. The decline in marginal tax rates made it less expensive to hold assets in taxable form. This environment encouraged people to shift equity from tangible assets like homes to financial assets, and contributed to the apparent increase in saving. (Engen, Gale, and Scholz, 1996b.) They also argue that an increase in home equity and consumer debt offset the increase in financial assets.

The tax-deferred status of retirement savings confounds the comparison of balances in IRAs to balances in taxable saving accounts. IRA balances are pretax amounts and must be reduced by the tax rate before they can be accurately compared to taxable account balances, which are post-tax. Again, refer to Table 4.3. The $9,000 increase in retirement savings vehicles between 1984 and 1991 does not mean the younger cohort had to save $9,000 more than the older cohort. Some of this balance represents deferred taxes on gains and contributions. Using a marginal tax rate of 28 percent, yields a $6,480 increase net of taxes. Subtracting the postponed taxes reduces the apparent impact of tax-deferred retirement accounts on saving. (Engen, Gale, and Scholz, 1996b.)

Finally, they contend that the SIPP data used by Poterba, Venti, and Wise are biased in favor of new savings due to excluded data. The SIPP data for 1984 did not include 401(k) balances, nor did it include balances in employer-sponsored thrift-savings plans that were later transferred to 401(k) accounts. Since the SIPP data for 1991

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[15] All figures are 1991 dollars.

includes these balances, the difference will appear to be new saving. Poterba, Venti, and Wise counter that this bias is negligible since the 1984 balances for 401(k)s were minimal.

The author believes that the downward adjustments made by Engen, Gale, and Scholz are overstated for a few reasons. First, citing a rise in consumer debt as proof of asset shifting is a tenuous claim. Rising consumer debt does not prove that IRA owners borrowed money to make annual contributions. Over the past decade, banks have been more willing to extend credit to more people. Credit card companies have dramatically expanded their client base, while lowering their qualification standards. Consumer debt has risen because consumer credit is more widely available, not because savers are charging their annual IRA contribution to their MasterCard™. Second, while the difference in the post-tax value of IRA balances certainly requires a downward adjustment, discounting the entire balance may be overstated. Some portion of IRA assets come from non-deductible contributions which are post-tax amounts. Although these amounts are probably small, including them in the tax adjustment will understate the post-tax value of IRA balances.

E.   CONCLUSIONS

Poterba, Venti, and Wise provide convincing evidence that IRAs increase saving and net wealth. Their research demonstrates that as IRA balances increase, non-IRA financial assets do not decrease by an offsetting amount. By showing that the amount of money accumulated in IRAs exceeds the pre-existing saving of most savers, they effectively discredit the argument that IRA contributions were funded by transferring money that had already been saved. Their work with cohort analysis is interesting, and does suggest that increased exposure to IRAs leads to higher saving and net wealth. The assumptions on which cohort analysis are based are not particularly robust, leaving their conclusions subject to challenge.

Engen, Gale, and Sholz mount several convincing challenges to the claims of new saving, and their findings suggest that the optimistic estimates of new saving require some downward adjustment. In particular, their argument that the difference in the savings of cohorts can be explained by factors other than the length of IRA exposure, demands some

reduction in the magnitude of the cohort effects. Still, they overcompensate for these other factors. Including home equity in the measurement of net wealth shows that households saved more money than Poterba, Venti, and Wise estimated using financial wealth only, but since little evidence suggests that households substituted home equity for IRA saving, the larger measure of net wealth will not affect the conclusion that IRAs increased saving.

The argument that IRAs are effective substitutes for other saving vehicles is unconvincing, lending credence to the claim that IRAs stimulate new saving. The people on whom the perfect substitutability theory are based behave in a perfectly rational manner, responding only to marginal incentives, and striving only to maximize their rate of return. The model leaves no room for the less rational behavior of real people. Several anomalies, such as the significant number of savers without IRAs for whom the accounts should be perfect substitutes for other saving, also undermine the theory.

The author concludes that the basic claim forwarded by Poterba, Venti, and Wise is correct: IRAs increase private saving. However, the estimate that 50 to 60 percent of contributions are new savings seems overstated. The author agrees with the more moderate estimates of a 26 percent new saving, and eschews the pessimistic estimate that IRAs reduce or fail to increase saving.

V. THE COST OF IRA DEDUCTIBILITY

A. INTRODUCTION

In this thesis the author proposes allowing service members to deduct their Individual Retirement Account contributions, regardless of their income. Chapter III demonstrated that despite their similar treatment by the Internal Revenue Code with regard to IRA deduction rules, military retirement differs markedly from qualified civilian retirement plans that receive favorable tax treatment. The author argues that extending universal IRA deductibility to all service members is one way of alleviating the inequity of similar tax treatment of retirement plans that offer vastly different protections for worker benefits. While Chapter II described the legislative and institutional obstacles to changing military retirement, this chapter describes another potential impediment to the proposed change: the cost of the proposal. By estimating the cost of the proposal, and putting it in perspective, the following discussion shows that cost is not a valid barrier to redressing the inequity of military retirement system by amending the Internal Revenue Code to allow all service members to deduct their IRA contributions.

Expanding the deductibility of Individual Retirement Account contributions will reduce federal personal income tax revenues by approximately $30 million annually. Over longer periods, the total revenue loss is much less than the sum of annual revenue losses because it is offset by increasing corporate income tax revenues, and increasing personal income tax revenues during retirement. The subsequent sections of the chapter describe the method used to arrive at this estimate.

B. THE ESTIMATE OF ANNUAL INCOME TAX REVENUE LOSS

Allowing all service members to deduct their IRA contributions regardless of their income would reduce federal income tax revenues by increasing the number of people who can to deduct their contributions from their taxable income. The estimate of the annual revenue loss that would result from extending universal deductibility to active-duty personnel is based on a study of the 1993 Current Population Survey (CPS) performed by

the Employee Benefit Research Institute (EBRI) that calculated IRA participation rates and contributions by income, age, and other demographic characteristics. The estimate described in this chapter uses their findings on the relationship between IRA participation and income to predict IRA participation among military personnel. The study divided the population into two groups: workers covered by an employer-sponsored retirement plan and workers not covered by any such plan. Since workers not covered by a qualified employer-sponsored pension plan can deduct their IRA contributions from taxable income regardless of their income level, the participation rates among these uncovered workers is a good predictor of IRA participation among military personnel if they were eligible to deduct their contributions.

Using a seven-step estimating procedure described below, the author concludes that the additional income-tax revenue loss caused by the proposal is $30 million annually. In the first step of the estimating procedure the active duty population was divided into eight groups according to the income categories used by EBRI. The second step was to count the number of service members in each of these categories. Next, the IRA participation rate for each group was multiplied by the number of personnel in that group, then multiplied by the average annual contribution for that group to arrive at the total annual IRA contribution per income group. The total contributions per group were then multiplied by an estimated marginal tax rate for the group to derive the total income-tax revenue loss per group. This loss was then adjusted to subtract the values of revenue lost under current deduction rules, and revenue which would not be lost under the proposal due to rules that restrict deductibility because of a spouse's retirement-plan coverage. Finally, the adjusted losses per income group were summed to arrive at a total revenue loss resulting from implementation of the proposal.

Table 5.1 shows the values used to arrive at the estimate and the following sections explain the estimating methodology in detail by describing the contents and source of each column in the table.

Table 5.1 **Estimate of Income Tax Revenue Loss**

Column 1 Income Group	Column 2 [1] Annual Earnings	Column 3 [2] Number of Personnel	Column 4 [3] Participaton Rate	Column 5 [4] Average Contribution	Column 6 [5] Total Contribution	Column 7 [6] Tax Rate	Column 8 [7] Revenue Loss	Column 9 [8] Adjustment Factor	Column 10 [9] Adjusted Loss
I	$0 - $5,499	39,620	2.1%	$1,608	$1,337,888	15%	$200,683	0%	$0
II	$5,500 - $10,999	66,350	3.3%	$1,968	$4,309,034	15%	$646,355	0%	$0
III	$11,000 - $16,499	262,591	3.2%	$1,492	$12,537,145	15%	$1,880,572	0%	$0
IV	$16,500 - $21,999	220,975	4.6%	$1,526	$15,511,561	15%	$2,326,734	0%	$0
V	$22,000 - $27,499	251,920	7.4%	$1,567	$29,212,139	15%	$4,381,821	0%	$0
VI	$27,500 - $32,999	209,172	8.1%	$1,788	$30,293,962	17%	$5,149,974	6.0%	$308,998
VII	$33,000 - $54,999	377,273	13.1%	$2,000	$98,845,526	26%	$25,699,837	67.2%	$17,270,290
VIII	$55,000 and up	121,652	24.1%	$2,000	$58,636,264	28%	$16,418,154	77.3%	$12,691,233
Total		1,549,553			$250,683,520		$56,704,129		$30,270,522

Source: Employee Benefit Research Institute and author's caluculations

1. From EBRI Issue Brief #153. Table 33. Indexed for wage growth.
2. From Defense Manpower Data Center.
3. From EBRI Issue Brief #153. Table 33.
4. From EBRI Issue Brief #153. Table 33. Indexed for wage growth.
5. Product of column 3, column 4, and column 5.

6. Author's estimate.
7. Product of column 6 and column 7.
8. Author's calculations.
9. Product of column 8 and column 9.

1.   Annual Earnings

The population of active duty personnel is divided into eight groups by annual income. In Issue Brief #153 from September 1994, the Employee Benefit Research Institute used data from the April 1993 employee benefit supplement to the Current Population Survey (CPS) to compute IRA participation rates and average contributions within eight income groups. Column one labels each group for ease of exposition. For example, the subsequent discussion refers to service members earning between $22,000 and $27,499 annually as Group V personnel. The income ranges used by EBRI were based on 1993 dollars, so the categories shown in column two were indexed for wage growth to 1997 values using the growth of military basic pay between 1993 and 1997.

2.   Number of Service Members Per Earnings Group

Column three shows the number of service members in each income group based on data provided by the Defense Manpower Data Center (see Table 5.2.) Income is defined as basic pay, Basic Allowance for Quarters, Basic Allowance for Subsistence, Variable Housing Allowance, Commuted Rations, and Special and Incentive pays. Because cash payments are considered, in-kind compensation such as government housing or messing is not included.

3.   Participation Rates

Column four contains the IRA participation rate for each income group. According to EBRI's findings, average participation was higher among workers who are covered by an employer-sponsored retirement plan. IRA participation among all workers covered by an employer's plan was 9.2 percent while participation among non-covered workers was 6.3 percent. The aggregate numbers are misleading, however. In the lowest four income groups ($0 - $21,999), covered workers have a much higher participation rate than their non-covered counterparts. IRA participation among non-covered workers roughly equals that of covered workers in the Groups V and VI ($22,000 - $32,999). In Groups VII and

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VIII ($33,000 and up) the participation rate among non-covered workers exceeds that of covered workers.

The finding that the average IRA participation rate is lower among workers not covered by an employer plan is surprising. One would expect higher rates of participation among non-covered workers since they are eligible to deduct their contributions, regardless of how much money they earn. In Groups VII and VIII, the higher participation rates among non-covered workers supports this expectation. The lower participation rates among Groups I through IV suggests that other factors such as a selectivity bias are at work. Coverage by employer-sponsored retirement plans is not exogenous to the worker. Employers do not provide retirement plans without considering the desires of their employees. They provide retirement plans because the after-tax value of a dollar in retirement benefits is, for many employees, greater than the after-tax value of an additional dollar in regular compensation. This is particularly true for high-income workers in the top tax brackets who place a high value on compensation which is not immediately taxed. Employers provide these plans because their workers prefer to receive some portion of their compensation in retirement benefits. Workers themselves consider the compensation package when choosing their employer. Workers who place a high value on savings in general, and retirement savings in particular, are more likely to go to work for an employer that provides a qualified retirement plan. (Engen, Gale, and Scholz, 1996a.)

If people who have a higher preference for saving are more likely to go to work for an employer that provides a retirement plan, then the higher participation rates among lower-income workers reflects a difference in the propensity to save between the two groups, not a greater incentive for covered workers to participate in an IRA. This is particularly true since covered workers in the lower income groups are eligible to deduct their IRA contributions because they are below the income thresholds at which deduction eligibility phases out. The after-tax incentive for workers in the 15-percent tax bracket to contribute to an IRA is identical for covered and non-covered workers. Thus the lower

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IRA participation rates for non-covered people in the lower annual earnings group indicates a selectivity bias and probably underestimates the actual participation rates among military personnel in these income categories.

Despite this bias, and for several reasons, the estimate presented here uses the participation rates for non-covered workers to predict IRA participation among service members in the face of universal deduction eligibility. First, the author believes that averaging the participation rates between covered and non-covered workers, or choosing the highest (or lowest) rate per income group would be less accurate than using the rates of one group for all personnel. Second, the purpose of this estimate is to predict the revenue loss if all military personnel were eligible to deduct their IRA contributions. While we can reasonably assume that all covered workers whose earnings place them in the 15-percent tax bracket are eligible to deduct their contributions, we do not know this for a fact. It is conceivable that other income which was not reported to the Current Population Survey, or income from a working spouse might make them ineligible to deduct their contributions. Since uncovered workers can deduct contributions regardless of income, we know that they will be able to do so, regardless of other sources of income which might place them in a higher tax bracket. Third, the participation rates among lower income service members are ultimately irrelevant to the estimate of additional cost resulting from the proposal. It makes no difference whether two percent or four percent of service members in Group I contribute to IRAs. Since these service members can already deduct their IRA contributions, the proposed reform would not cause any new revenue loss. Finally, using the participation rates among non-covered workers applies the highest percentage to the groups that do matter for the estimate of additional revenue loss: those workers who are currently ineligible to deduct their contributions. Using the higher estimate for participation means that the estimate is more likely to overestimate the cost to the federal government than to underestimate it.

4. Average Annual Contribution

Column five shows the average annual contribution per IRA contributor in each income group. Originally computed by EBRI in 1993 dollars, the values were indexed for wage growth using the growth in military basic pay between 1993 and 1997. Notice that the average contribution for Groups I and II exceeds that for all other groups except Groups VII and VIII. That the lowest earners contribute, on average, more money to IRAs than most of their higher-wage counterparts is unexpected. The author believes the explanation lies in demographics. Only 6.9 percent of workers surveyed in the CPS fell into Group I and only 16.7 percent of workers fell into Group I and II combined. Some of the lowest earners are retirees who have low current income, but high wealth. These people have the incentive and the ability to make maximum annual contributions to IRAs to shelter their post-retirement earnings from taxes. Thus the wealth of many IRA contributors in the Groups I and II is probably greater than the wealth of active-duty personnel in these groups. The average contribution for these groups probably exaggerates the expected contribution level of the lowest-paid service members.

For reasons similar to those stated in the previous section, this anomaly does not compromise the validity of the estimate. First, this error will overstate the total revenue loss resulting from IRA deductions by service members and any bias it imposes will disfavor the proposal. Second, the total expected contribution for Groups I and II is $5.6 million. At only 2.2 percent of the total expected contribution for all service members ($250 million), an error in the value of expected contributions among the lowest earners will have little impact on the total cost of the program. Finally, the revenue loss caused by the IRA contributions of the lowest two income groups occurs under the existing IRA deduction rules, and would not be an additional cost arising from a rule change. Thus, any discrepancy in the amount of contributions would not much affect the final estimate of additional revenue loss resulting from the proposal.

5. Total Service Member Contributions to IRAs

Column six is the expected value of the total annual contributions to IRAs by service members. To calculate the value of total contributions per income group, multiply the participation rate of that group by the number of service members, and then multiply again by the average annual contribution per group. The value for each group is summed to arrive at the estimate for total annual IRA contributions by military personnel. This figure, shown in the bottom row of column six, is approximately $251 million.

6. Tax Brackets

Column seven contains the estimated marginal tax rate for each earnings group. Several factors confound the effort to estimate marginal tax rates using total military pay. First, reported service-member income does not include non-military sources such as spousal income second jobs, investment income, or rental income. This omission understates actual earnings. Second, some military compensation is paid in non-taxable allowances, such as Basic Allowance for Quarters (BAQ), Basic Allowance for Subsistence (BAS), and Variable Housing Allowance (VHA). Including these allowances is essential to determining total income, but overstates taxable income. It is difficult, if not impossible to compute the portion of pay that is not taxable since the allowance amounts vary according to rank, geographic location, and actual housing expenses. Additionally, some service members receive this compensation in the form of government-provided housing and messing, and so their pay may be fully taxable. Calculating the value of deductions and exemptions is also difficult. Data is available on the withholding status claimed by service members, but it may not accurately reflect the actual deductions and exemptions the service member can claim. The factors listed above are offsetting, but the relative magnitude of each are unknown so it is difficult to determine in which direction any adjustment to total income should be made.

a.   *Assumptions*

The researcher makes several assumptions in estimating the average marginal tax rate per income group. One assumption is that unmarried personnel reduce their total income by the standard unmarried deduction and one personal exemption. Another assumption is that married personnel use the married deduction and two personal exemptions. The researcher ignores the following possible exemption and deduction variations to simplify the estimate:

- Single personnel may be heads of households and qualify for more exemptions and have a higher tax-bracket threshold.

- Married personnel may have additional exemptions for dependent children.

- Personnel may have itemized deductions that exceed the standard deduction.

The data from the Defense Manpower Data Center, summarized in Table 5.2, categorizes personnel as either single and married according to their tax-withholding status. While some personnel claiming single filing status are married, the author assumes that withholding status indicates actual marital status. Assuming these personnel are in fact single may underestimate their taxable income since married personnel withholding at the single rate may have higher income that requires higher withholding

According to the Military Family Resource Center, 54 percent of spouses of service members are employed in the civilian workforce. Therefore, the author assumes that the percentage of all personnel in an income group who are married and have an income-earning spouse is 54 percent of all married personnel in that group. Thus, if 50 percent of the personnel in an income group are married, then 27 percent of all personnel in the group are assumed married to an income earning spouse, while 23 percent are assumed married to a spouse who does not earn an income.

For Income Groups I through IV, the author assumes there are no deductions for non-taxable allowances. Most service members in these groups are junior

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Table 5.2 Service Member Distribution by Income and Marital Status

Income Group Distribution	I	II	III	IV	V	VI	VII	VIII	TOTAL
Married	10,713	1,393	16,810	73,354	112,802	107,001	228,562	89,236	639,871
Percentage Married	27.0%	2.1%	6.4%	33.2%	44.8%	51.2%	60.6%	73.4%	41.3%
Single	28,907	64,957	245,781	147,621	139,118	102,171	148,711	32,416	909,682
Percentage Single	73.0%	97.9%	93.6%	66.8%	55.2%	48.8%	39.4%	26.6%	58.7%
Total	39,620	66,350	262,591	220,975	251,920	209,172	377,273	121,652	1,549,553

Source: Defense Manpower Data Center

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enlisted personnel who reside in the barracks and dine in the mess hall. Since they receive subsistence and quarters in kind, most of their compensation will be taxable pay. Regardless, the total pay for Groups I through IV is low enough that this assumption has no effect on their tax bracket.

For income groups that straddle a tax bracket some assumptions are made about non-taxable allowances, based on the likely ranks of personnel in those groups. These assumptions are described where they are made.

In almost all cases where assumptions are made, the researcher used values that result in a higher estimated income loss. Thus the final estimate of income tax revenue loss caused by the proposal should be a worst case-scenario.

Table 5.3 shows the marginal tax bracket thresholds for 1997. It is followed by a detailed description of how the researcher arrived at an average marginal tax rate for each income group.

Table 5.3 **1997 Income Tax Brackets**

Marginal Tax Rate	Upper Limit for Unmarried Workers	Upper Limit for Married Workers
15 percent	$24,650	$41,200
28 percent	$59,750	$99,600
31 percent	$124,650	$151,750
36 percent	$271,050	271,050
39 percent	All income over $271,050	All income over $271,050

b. *Income Groups I, II, and III*

The 1997 tax schedule imposes a 15 percent levy on taxable income up to $24,650 for unmarried individuals. Thus, any single wage earner with taxable income below this level faces a marginal tax rate of 15 percent. All unmarried service members in Income Groups I, II, and III ($0 - $16,499) are in the 15 percent tax bracket. Even if all their reported income is taxable, they are still well below the 28-percent tax bracket

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threshold. Assuming they can claim the standard deduction of $4,000 and one personal exemption of $2,550, their income levels are sufficiently low that other sources of income are extremely unlikely to put them in the 28-percent tax bracket.

Married individuals are taxed at 15-percent for all taxable income up to $41,200. A married service member in Groups I through III whose spouse does not have an independent source of income will be well below the 28-percent tax bracket. If we assume that an income-earning spouse receives exactly the same pay as the service member (doubling total income) the top-earning service members in Group III are still approximately $7,000 below the $41,200 bracket margin. The assumption that wage-earning military spouses make as much as the service member probably overstates household income in most cases.

The author concludes that all service members in Income Groups I, II, and III will be in the 15 percent tax bracket.

c.   *Income Group IV*

The author believes that all single personnel and most married personnel earning between $16,500 and $21,999 face a 15-percent marginal tax rate. The top wage earner in Group IV earns about $3,000 less than the upper bracket limit for unmarried taxpayers, and second sources of income would have to raise total income significantly to offset the reductions from non-taxable income and the standard deduction and exemption. Single-earner married personnel in this group also earn much less than $41,200 and are taxed at 15 percent. Most married personnel with wage-earning spouses will still earn less than the 15-percent bracket limit. Married personnel at the upper limit of Group IV whose spouses earn equivalent wages will find themselves in the 28-percent tax bracket in terms of total income, but subtracting the standard deduction for married individuals and two personal exemptions reduces their taxable income by $11,800. Married personnel earning $44,998 (twice the maximum total military pay in Group IV) would have $33,198 in taxable income assuming non-taxable allowances offset other sources of income like

investment or rental income. Thus, even two-earner couples in income Group IV should face a 15-percent marginal tax rate.

d. Income Group V

Single personnel in Group V straddle the tax bracket in terms of total income. However when $6,550 is subtracted for the standard deduction and exemption, even the highest-paid single earners will be taxed at 15 percent. One-earner married personnel are still solidly in the 15-percent tax bracket. The highest-paid married personnel whose spouses earn identical incomes will have a total income of $54,998 and taxable income of $43,198 when the standard deduction and two personal exemptions are subtracted. Take away $7,000 for non-taxable allowances and many of the highest wage earners will be in the 15-percent bracket[16]. Some personnel at the upper end of Group V who have significant second sources of income or who receive allowances for quarters and subsistence in kind may face a 28-percent marginal tax rate, but only a few personnel are likely to fit this description. The vast majority of personnel in Group V are taxed at 15 percent.

e. Income Group VI

Maximum military pay for single-earner married couples in Group VI is $32,999. Unless other sources of income exceeds their deductions, exemptions, and non-taxable pay by $8,000, they will be taxed at 15 percent. Most unmarried personnel in Group VI will also be taxed at 15 percent. The average total income for Group VI is $29,548, which falls below the upper-bracket limit for unmarried individuals when $6,550 for the standard deduction and exemption is subtracted. (See Table 5.2 for the average earnings per income group.) The maximum value of total earnings for single people in Group VI, less the standard deduction and exemption is $26,449, which exceeds the upper

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[16] Group V is comprised of the newly commissioned officers and junior-to-mid-career staff noncommissioned officers. A married O-1 receives $5,796 in BAQ and $1,842 in BAS. A married E-6 receives $6,166 in BAQ and $2,610 in BAS.

limit of the 15-percent bracket by $1,799. Depending on the relative magnitude of non-taxable allowances and other sources of income some of the highest-paid single personnel in Group VI may face a 28-percent tax rate for a small portion of their income. Assuming non-taxable allowances of $7,000[17] leads the researcher to believe that relatively few single earners in Group VI will have enough secondary income to push their taxable income into the 28-percent tax bracket.

Married personnel with wage earning spouses may have taxable income in the 28-percent tax bracket depending on the relative magnitude of non-taxable pay and deductions from income and the amount spousal earnings or other sources of income. The author assumes that half of all two-earner married couples in Group VI are taxed at the 15 percent marginal rate and half are taxed at the 28 percent marginal rate. This equates to an average marginal tax rate of 21.5 percent for two-earner married personnel in Group VI.

The 17-percent average marginal tax rate for all Group VI personnel was computed using Equation 5.1. The percentage of single personnel is multiplied by their marginal tax rate, then added to the product of the percentage of one-earner married personnel and their marginal tax rate, then added to the product of the percentage of two-earner married personnel and their marginal tax rate.

$$(\text{S-VI})*(\text{MTR}) + (\text{M-VI})*(\text{MTR}) + (\text{T-VI})*(\text{MTR}) = \text{Average MTR-VI} \qquad (5.1)$$

Where:

S-VI =   percentage of single personnel in Group VI

M-VI =   percentage of one-earner married personnel in Group VI

T-VI =   percentage of two-earner married personnel in Group VI

MTR =   Marginal Tax Rate

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[17] Group VI is comprised of junior officers and mid-career-to-senior staff non-commissioned officers. BAQ and BAS for an unmarried O-2 is $6,800 annually and $7,100 for an unmarried E-7.

Table 5.4 shows the values for the above variables which result in the 17 percent average marginal tax rate for Group VI.

Table 5.4 **Weighted Average Marginal Tax Rate for Group VI**

Percentage Single	Marginal Tax Rate	Married One Income	Marginal Tax Rate	Married Two Incomes	Marginal Tax Rate	Weighted Average
48.8%	15%	23.5%	15%	27.6%	21.5%	**17%**

f.   *Income Group VII*

Most personnel in Group VII face a 28-percent marginal tax rate. Single personnel at the lowest end of the income range may have sufficient deductions from total income to qualify for the 15-percent tax rate, but most will be over the bracket threshold. Married personnel whose spouses earn income will generally face a 28-percent marginal tax rate. Many single-earner married couples will have taxable income low enough to qualify for the 15-percent tax rate since the average income among Group VII personnel is $42,167, however, the highest paid single-earner married couples are taxed at 28 percent. The author assumes that half of the single-earner married personnel in Group VII are taxed at the 15-percent marginal rate, and half are taxed at 28 percent. Thus, the author concludes that the average marginal tax rate for single-earner married personnel in Group VII is 21.5 percent. The average marginal tax rate for all personnel in Group VII is 26 percent. This is derived by applying Equation 5.1 to the personnel distribution and marginal tax rates for Group VII. The values are shown in Table 5.5.

Table 5.5 **Weighted Average Marginal Tax Rate for Group VII**

Percentage Single	Marginal Tax Rate	Married One Income	Marginal Tax Rate	Married Two Incomes	Marginal Tax Rate	Weighted Average
39.4%	28%	27.9%	21.5%	32.7%	28%	26%

g.   *Income Group VIII*

The vast majority of personnel earning more than $55,000 annually face a 28-percent marginal tax rate. Single personnel at the bottom of Income Group VIII are unlikely to have enough deductions from total income to bring their taxable income under

$24,650. Married personnel with wage-earning spouses face a similar predicament. Even married personnel with one income would require a mortgage interest deduction, several children, and an aggressive accountant to qualify for the 15 percent tax rate. Certainly a few service members whose earnings are at the bottom of Group VIII may be in the 15-percent tax bracket, but there cannot be many. Some of the most senior officers earn enough to face a 31-percent marginal tax rate, but these individuals comprise a very small portion of the active duty force. Since most service members in Group VIII are in the 28-percent tax bracket, and the small portion of personnel in the 15-percent bracket are roughly offset by a small portion of personnel in the 31-percent bracket, the researcher concludes that Group VIII personnel face a 28-percent marginal tax rate.

7.   Income-Tax Revenue Loss

Column eight shows the income tax revenue loss per income group. The federal government loses income tax revenue on IRA contributions because it foregoes collecting taxes until the funds are withdrawn from the account. The cost to the government, the taxes they don't collect, is the product of the contribution and the IRA owner's marginal tax rate. For example, when a person in the 28-percent tax bracket contributes $2,000 to an IRA, the federal treasury receives $560 less than it would have without the contribution deduction. The expected value of the total revenue loss per income group is computed by multiplying the total contributions per group by the average marginal tax rate of that group. According to the estimate, the total income tax revenue loss due service member contributions to IRAs is $56.7 million.

8.   The Adjustment Factor

Only a portion of the $56.7 million revenue loss results from changing current rules to allow all service members to deduct their IRA contributions regardless of income. Since some of this loss occurs under current regulations, the true cost of the proposal is only the amount by which it exceeds the existing cost. Two factors reduce the cost of the proposal: contributions that are currently deductible under existing rules and

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contributions that would remain nondeductible after the rule change because the service member's spouse is covered by an employer-sponsored retirement plan.

Any service member in the 15 percent tax bracket is currently eligible to deduct his IRA contribution because his income is below the phase-out levels described in Chapter III.[18] Personnel whose taxable income exceeds the upper limit of the 15 percent bracket by $10,000 or less can make partially deductible contributions, but for the sake of simplicity, the estimate ignores them. Doing so will overstate the cost of the proposal by attributing to it existing revenue losses.

For each income group the percentage of the revenue loss (L) that is attributable to the proposal is:

$$L = S + M + T - P \tag{5.2}$$

Where:

$S =$ percentage of total personnel in the income group who are unmarried personnel with a 28-percent marginal tax rate

$M =$ percentage of total personnel in the income group who one-earner married personnel with a 28-percent marginal tax rate

$T =$ percentage of total personnel in the income group who two-earner married personnel with a 28-percent marginal tax rate

$P =$ percentage of total personnel in the income group who two-earner married personnel with a 28-percent marginal tax rate whose spouse is covered by an employer-sponsored retirement plan

Applying Equation 5.2 to the personnel distribution in each income group generates the revenue loss adjustment factor for that group. The results are shown in Table 5.6. The adjustment factor for Groups I through V are not shown since the researcher concludes that all personnel in those groups are taxed at the 15 percent marginal rate, giving S, M, T, P and L values of zero. The adjustment factors derived below are included in column nine of Table 5.1.

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[18] Actually, the tax brackets do not precisely correspond to the deduction phase-out levels. For unmarried taxpayers, the first $350 of income taxed at 28 percent can be contributed to IRAs on a deductible basis. For married taxpayers, the last $1,200 of income taxed at 15 percent cannot be contributed on a fully deductible basis.

Table 5.6 **Revenue Loss Adjustment Factor**

Income Category	S	M	T	P	Adjustment Factor (L)
VI	0.0%	0.0%	14.0%	8.0%	6.0%
VII	39.4%	14.0%	33.0%	18.8%	67.6%
VIII	26.6%	33.7%	39.6%	22.6%	77.3%

To determine the value of S for each group, the percentage of unmarried personnel is multiplied by the percentage of single personnel who are taxed at the 28-percent marginal rate. 48.8 percent of personnel in Group VI are single, but none are taxed at 28 percent, so the value of S-VI is zero. For Groups VII and VIII, all single personnel are taxed at 28 percent so the value of S in those categories is the percentage of personnel who are unmarried, or 39.4 percent and 26.6 percent respectively.

The percentage of married personnel in each group is the complement of the percentage of single personnel for that group. Since 54 percent of military spouses are employed in the civilian workforce, the percentage who are-earner married personnel is 46 percent of the total number of married personnel. The value of M is the percentage of the one-earner married personnel who are taxed at the 28-percent marginal rate. None of the one-earner married personnel in Group VI are taxed at 28 percent, so the value of M-VI is zero. The researcher assumed that half of the one-earner couples in Group VII are taxed at 28 percent. Since 60 percent of personnel in Group VII are married, and 46 percent have spouses who do not earn an income, 28 percent of Group VII personnel are one-earner couples. 50 percent of the 28 percent of the one-earner married personnel in this group gives M-VII a value of 14 percent. All of the one-earner married couples in Group VIII are taxed at 28 percent so M-$VIII$ is 33.7 percent.

T is the percentage of personnel who are married to an income-earning spouse, (54 percent of the married personnel in the group) who are taxed at the 28-percent marginal rate. For Group VI, the researcher assumed that half of the two-earner married couples were in the 28-percent tax bracket. Since 28 percent of Group VI personnel are two-earner married couples, T-VI is 14 percent. All two-earner married couples in Group VII

and VIII are in the 28 percent tax bracket so the values of *T-VII* and *T-VIII* are 33 percent and 39.6 percent respectively.

P is the percentage of two-earner married personnel with a 28-percent marginal tax rate who remain ineligible to deduct their contributions because their spouse is covered by an employer-sponsored retirement plan. According to EBRI, 57 percent of all civilian, nonagricultural workers are covered by such a plan so the author assumes that 57 percent of married personnel with working spouses are covered by the spouse's retirement plan. Thus, P is 57 percent of T. Subtracting P from the sum of S, M, and T gives the percentage of the revenue loss L in each group that is attributable the proposal to extend universal IRA deductibility.

9.   The Adjusted Revenue Loss

The final step in the estimating procedure is to multiply the percentage of the income tax revenue loss in each income group that can be assigned to the proposal by the total revenue loss for the group (column eight.) This yields the adjusted revenue loss for each income group, the sum of which is the estimate of the income-tax-revenue loss caused by allowing all military personnel to deduct their IRA contributions from taxable income regardless of their income level. The researcher estimates that this proposal would cost the U.S. Treasury $30 million annually.

C.   A PERSPECTIVE ON THE ANNUAL COSTS OF THE PROPOSAL

The Internal Revenue Code treats all service members as if they have an ERISA-compliant retirement plan. However, military retirement does not provide the same vesting and coverage protections afforded civilian workers with qualified plans. Even though most service members never qualify for military retirement benefits, they are denied the opportunity for tax-deferred retirement savings available to most other citizens. The author estimates that the federal government could alleviate this inequity by foregoing $30 million in annual income tax revenues.

Comparing this revenue loss to other federal expenditures puts the cost of the proposal in perspective. The cost of the proposal is less than 1/500th of one percent of the total $1.6 trillion federal budget. It is just over 1/100th of one percent of the $244 billion Defense budget. And it is slightly more than 4/100th of one percent of the $70 billion Military Personnel appropriation.

Keep in mind that the proposal does not require the federal government to give $30 million dollars to service members. On the contrary, it requires the government only to allow those service members who contribute to IRAs to keep more of what they earn.

D.   THE LONG TERM COSTS OF IRAS

The preceding estimate of the annual costs of IRA deductibility overstates the impact of the proposal on government debt, national saving, and tax revenues over the long term. Acquiring a more complete estimate of the total costs of IRAs requires an examination of two revenue effects of IRAs that occur after the years a contribution is made.

Although it delays collection of income taxes on money contributed to IRAs in the year in which the money was earned, the government ultimately collects taxes on a much larger stock of capital. Each dollar that goes into an IRA eventually comes out, and when it does the government collects taxes. In the interim, the IRA has increased the tax base because the contributions accrued dividends, interest, and capital gains, which are also taxed when they are withdrawn. What's more, the gains on IRA assets are larger than the gains on identical savings vehicles held in taxable accounts, because IRA assets compound on a pre-tax basis. Thus, the pool of capital in an IRA, on which the government ultimately collects taxes, is larger than the pool of capital that would accrue to the same amount of saving held in a taxable account.

Since the government delays tax collection on contributions now to collect taxes on contributions plus accumulated gains later, tax revenues later are larger than they would have been without the IRA, assuming that the contributor's marginal tax rate in

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retirement is at least as high as it was during his preretirement years and that the rate of return on IRA assets is positive. If the marginal tax rate is lower during retirement than in preretirement, the value of tax revenues may still be higher under IRAs, but it may not be. It will depend on the rate of return on IRA assets and the difference in the contributor's preretirement and retirement marginal tax rates. A sufficiently large rate of return offsets the reduction in the marginal tax rate.

Of course, a tax revenue gain in the future may mean a present value tax revenue loss. Because a dollar in tax revenues now is worth more than a dollar in tax revenues 30 years from now, the government may lose money by delaying tax collection on IRA contributions. Whether there is a gain or loss in present value depends on the discount rate (or the interest rate on government debt) relative to the rate of return on IRA assets. Since it is plausible to assume that the rate of return on IRA assets will exceed the cost of capital to the federal government, the net present value of IRAs will be positive. Again, if the preretirement marginal tax rate is higher than the retirement period's marginal tax rate, the increase in the rate of return might not be enough to offset the revenue loss from the lower retirement tax rate and the net present value of the program may be negative. The point is that whether tax revenues will rise in retirement when IRA assets are withdrawn, and whether there is net gain or loss in nominal value or present value, the tax revenues ultimately collected will reduce, if not outweigh, the loss of tax revenues in the year of the contribution.

Ignoring the increase in tax revenues during retirement is only one of the ways traditional analysis overestimates the loss of tax revenues from IRAs. Martin Feldstein (1995) points out that IRA saving increases the capital stock available to corporations for investment. Returns on this increased capital expand corporate revenue, which in turn swells corporate[19] income tax revenues. Feldstein summarizes the effect of increased corporate tax revenues stemming from IRA savings.

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[19] By "corporate" Feldstein refers to a wide range of businesses since even nonincorporated businesses pay income taxes. For the sake of simplifying the discussion, Feldstein uses the term "corporate" to describe the larger group of business enterprises.

First, the estimated loss of tax revenue caused by the introduction of an IRA plan is reduced substantially by the extra corporate tax revenue during the first five years after its enactment. With plausible parameter values, the corporate tax revenue offsets about one-third of the decline in personal tax revenue during the first five years and about two-thirds of the decline in ten years. Second over a longer time period the IRA program actually increases total tax revenue and does so by so much that the present value of changes in annual tax revenues is positive. This implies that the national debt is eventually permanently lower than it would have been without the IRA program. Although each individual eventually withdraws all that he has accumulated in the IRA, the national capital stock is therefore permanently higher because the increased government receipts permanently reduce the national debt. (Feldstein, p. 478.)

Five key parameters determine the effect of IRAs on tax revenues when the change in corporate tax receipts is included in the analysis: the personal tax rates, the corporate tax rates, the portion of IRA contributions that are diverted from other savings, the rate of return on physical capital and the rate of return on government debt (Feldstein.)

Feldstein demonstrates that when the impact of corporate income tax revenues is included in the calculation, the net effect of IRAs on total tax revenue in a given year (T_t) of the preretirement period is:

$$T_t = -\theta_t[C_t - R_t + (1-\tau)rB_t] + \tau(A_t - B_t)r \tag{5.3}$$

Where

θ_t = the personal marginal tax rate in year t

C_t = the IRA contribution in year t

R_t = funds withdrawn from the IRA in year t

τ = the corporate marginal tax rate in year t

r = the rate of return on additions to corporate capital stock

B_t = the total capital stock diverted from existing saving at the beginning of year t

A_t = the value of the IRA account at the start of year t

Additionally:

$$B_t = [1+(1-\theta_t)(1-\tau)r]B_{t-1} + \lambda C_t - W_t \tag{5.4}$$

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Where

λ = the percentage of IRA saving that is diverted from existing saving

W_t = the withdrawals from existing savings that would have been made in year t

In Equation 5.3, the first term describes the personal income tax loss each year, while the second describes the increase in corporate income tax revenues resulting from the increased capital stock. Feldstein points out that even though the change in personal income tax revenues is negative each year, the corporate income tax effect is positive in the first year and grows in importance each year until it is eventually larger than the personal income tax revenue loss. Since IRA assets earn a higher rate of return $[(1-\tau)r]$ than taxable saving vehicles $[(1-\tau)(1-\theta)r]$[20] the corporate tax effect grows in relative importance and will eventually dominate the loss in personal-income-tax revenues if the preretirement period lasts long enough. If this is the case, the total annual revenue effect of IRAs during the preretirement years is positive, meaning IRAs pay for themselves before the owner begins withdrawing the assets from the account. Feldstein points out that even if the entire IRA contribution is transferred from existing savings, the net effect is still positive because the contributor's wealth is larger due to the higher rate of return on capital.

There is nothing magical about IRAs that increase corporate income tax revenues. Any saving that increases the nation's stock of capital will increase corporate investment, the returns on which increase corporate income tax revenues. Thus the cost analysis of any proposal to encourage saving (or reduce the disincentive to save) should consider the positive effect on capital investment and corporate tax revenues. A unique feature of IRAs that enables them to increase savings relative to traditional saving vehicles is the fact that they compound gross of personal income taxes. Even if all IRA contributions come from existing saving, ceteris parabus, IRAs still increase savings because assets do not

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[20] Feldstein uses this notation for the rate of return to point out that traditional saving vehicles compound net of both personal and corporate income taxes (τ and θ) while IRAs compound net of corporate taxes only.

have to be withdrawn from the account (or diverted from other sources) each year to pay taxes on interest, dividends, or realized capital gains.

Martin Feldstein illustrates the long-term effects of IRAs on government debt using different combinations of values of the parameters mentioned earlier. In one variation he describes a person who contributes to an IRA for 20 years, beginning at age 45. This person then withdraws the funds in equal annual amounts until age 79. Feldstein assumes that the personal-income-tax-revenue losses are financed with increased government debt. The individual in the example contributes $2,000 a year, and 20 percent of the contribution is diverted from other savings. The rate of return on capital is ten percent, the corporate tax rate is 34 percent, and the contributor's marginal tax rate is 25 percent during both preretirement and retirement. The real interest rate on government debt is two percent. Using these values, the reduction in personal income tax revenues caused by the IRA increases government debt by $14,300 at the time the individual retires. When the individual retires and begins withdrawing his IRA assets, the change in income tax revenue becomes positive so that by the time the contributions and gains in the IRA have been completely withdrawn at age 79, the government debt is $14,929 lower than it would have been without the IRA program. These figures do not take into account the increase in corporate income tax revenues.

Feldstein demonstrates that including the positive revenue effect of the increased corporate income tax receipts has a dramatic effect on the total revenue. Using the same scenario, the gain in corporate income taxes offsets more than half the loss in personal income tax after four years (by the time the contributor reaches age 49.) In the ninth year, the corporate tax revenue offsets the entire loss in personal income tax, and from that point on, the IRA has a net positive effect on total tax revenues. By the fourteenth year, the accumulated gains from increased corporate tax revenues completely offset the preceding net losses so that government debt is permanently lower than when the contributor began the IRA. When the individual retires at 65, government debt has been reduced by $6,397, compared to the prediction of a $14,300 increase in debt predicted

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when corporate tax revenue increases are not included. By the time the individual expends all IRA funds at age 79, government debt is $64,906 lower than it would have been without the IRA. (Feldstein, 1995.)

The assumptions on which the preceding example was based may be optimistic, so Feldstein uses several different combinations of parameter values in his model and determines that even under more pessimistic assumptions, the corporate tax revenue effect increases the present value of total tax revenues. For example, if the corporate marginal tax rate is only 17 percent, the individual's marginal tax rate drops from 25 percent during the contribution years to 15 percent during retirement, and half of the IRA contribution is funded by diverting other saving[21], the net effect on government debt is still positive by the time the contributor withdraws all the funds from the IRA. Under this scenario, the gain in corporate tax revenues exceeds half the reduction in personal tax revenues by the 14th year of contribution, and completely offsets the personal income tax loss by the 21st year. The net government debt declines in the 26th year, and by the time the contributor withdraws all the funds at age 79, government debt is $19,063 lower than it would have been without the IRA.

> Thus, while the IRA reduces personal income tax revenues in every preretirement year, the increase in corporate income tax receipts offsets the personal income tax losses and generally makes the net tax effect positive during the preretirement period. The impact of the government debt, including the accumulated interest effects, is therefore positive long before it would be if only the personal tax revenue were affected. Over the entire period of the IRA, the present value of the personal income tax changes is positive for most but not all of the parametric variations considered, but the positive contribution of the increased corporate income tax revenue makes the combined present value of all tax changes positive in every parametric case examined. The overall effect is therefore to have the national capital stock higher than it would be without the IRA program." (Feldstein, p. 487)

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[21] According to the discussion in Chapter IV, this estimate of the percentage of diverted funds is more plausible. If 26 percent of IRA contributions is new saving and 35 percent comes from the reduction in taxes, 39 percent must come from diverting money from other savings.

And since government debt is reduced by the IRA, the national capital stock is permanently higher, even after the IRA owner has withdrawn all the contributions and accumulated gains.

Presenting Martin Feldstein's argument here illustrates that a simple calculation of annual personal income tax revenue loss from IRA contributions significantly overstates actual costs by failing to take into account the positive effect on tax revenues of the withdrawal of a larger pool of funds, and by failing to include increased corporate tax revenues in the equation. At what point the net revenue effect becomes positive, and at what point net government debt declines, depends on the values chosen for the relevant parameters. It is impossible to determine whether IRA contributions by military personnel would reduce government debt during their active-duty service because the present value would depend on their personal marginal tax rate and the number of years they contributed to IRAs during their active duty service. For personnel who begin contributing early in their career, the net revenue effect will most likely be positive. In the case of personnel who wait until later in their career to begin contributions, the growing effect of increasing corporate tax revenues may not have time to offset the higher loss in personal income tax revenues incurred early in the contribution period. Thus, for personnel who separate from the military less than 15 years[22] after they begin contributing to IRAs, the net effect during their period of active duty service will be an increase in government debt. However, the ultimate effect will be a reduction in government debt, even though it will not occur until after the service member leaves the military.

Regardless of when the net revenue effect of IRAs becomes positive, and when government debt declines, the cost of IRAs is much less than an examination of the annual loss in personal income tax revenues alone would lead one to believe. The author's estimate of a $30 million loss in annual personal income tax revenue overstates the actual annual cost because it does not include the corporate tax revenue effect. Since most

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[22] In the twelve cases (or variations of parameter values) presented in Feldstein's argument, government debt declined between 15 and 26 years after the contributor began his IRA.

service members will not contribute to IRAs for 15 to 26 years before they separate, it is unlikely that the net effect of IRA participation by active duty service members will be positive if the examination of revenue is restricted to the active-duty period. It will be significantly less than an estimate made by multiplying the annual personal income tax revenue loss by the number of years of IRA contributions while on active duty. And if the net effect is examined over the service member's lifetime, including the period after separation from active duty, IRAs ultimately reduce national debt.

Since it is just a matter of time before an individual's IRA reduces government debt, the sooner service members start contributing, the better. Even though there is an initial reduction in total annual tax revenues, the federal government will hasten the eventual reduction in debt by encouraging (or at least removing the disincentive to) IRA contributions by active duty personnel.

E. CONCLUSIONS

In this chapter, the author demonstrated that the cost to the federal government in personal income tax revenue lost from allowing service members to deduct their IRA contributions from taxable income, regardless of their income level, is $30 million dollars annually. Considered in isolation, the cost of the proposal is not prohibitive, and should not be used as a reason to deny service members the same opportunity for tax-deferred retirement savings available to other citizens who do not have an ERISA-compliant retirement plan. When the positive effect of increased corporate income tax revenues is considered, the argument for contribution deductibility becomes even stronger. Not only is the cost of the proposal lower than it appears from estimating the personal income tax losses during the contribution period, but the proposal may even result in a net revenue gain to the government.

VI.   CONCLUSIONS

This thesis presented both equity and economic arguments that support the proposal to allow all military personnel to deduct their IRA contributions regardless of income.

Military retirement generously benefits the 17 percent of service members who meet the 20 years-of-service eligibility and vesting requirement, by providing an immediate annuity of 40 to 75 percent of basic pay after separation. These generous benefits come at the expense of the larger majority of personnel who never reach 20 years of service, and thus receive no retirement benefit. Critics from diverse backgrounds have faulted the system, in which a person who serves for 19 years can be terminated and receive none of the retirement benefits that he has been accruing, for being unfair to the majority of service members.

For decades, Congress, the Department of Defense, and several blue-ribbon commissions have examined, considered, and debated a variety of proposals designed to make the military retirement system more equitable to all service members. A lack of consensus, combined with bureaucratic and legislative inertia, stymied efforts for reform. In the last 50 years, only marginal changes designed to cut costs have been implemented.

The Defense Department itself is loathe to embrace proposals for change for two reasons. First, the retirement system dramatically affects force structure, influencing the distribution of personnel by rank and experience within the armed forces. Any restructuring of military retirement will affect accession, effort motivation, ability sorting, and retention, dramatically reshaping the force in the process. There are proposals to reform the retirement system as part of a comprehensive military compensation overhaul, but they have not attracted support from either DoD or Congress.

Second, the Defense Department resists any effort at retirement system reform for fear of "putting retirement on the table." DoD is concerned, with good reason in this era of declining Defense budgets, Congress would use an opportunity to change the system as

a way to carve more budget savings out of military retirement without improving the system's structure, performance or equity. DoD doesn't want to be the one to initiate a reform process that might result in a system that is even worse.

Military personnel who separate voluntarily or involuntarily at any point prior to 20 years of service will not receive any of the retirement benefit they have allegedly accrued during their service. Congress enacted the Employee Retirement Income Security Act of 1974 to prevent this kind of practice in the private sector. By lowering mandatory vesting dates to five years, expanding coverage requirements, and mandating funding levels, Congress improved worker's mobility by allowing employees to retain accrued retirement benefits if they change jobs. The law also protected employees from benefit loss caused by the collapse of underfunded plans and made it difficult for employers to reduce the costs of their retirement system by terminating employees before they reach retirement eligibility.

Private plans that comply with ERISA's provisions qualify for tax-favored treatment under the Internal Revenue Code. Employers who place assets in a qualified plan they have established for the benefit of their workers can deduct their contributions to the plan from business earnings, reducing their tax liability. Employees do not have to pay taxes on the employer's contributions, until they begin to receive them as benefits during retirement. Thus, qualified plans allow both employers and employees to defer taxes on retirement plan's assets for a period of time. For the same cost, employers can provide additional after-tax compensation to employees by providing some pay in retirement benefits. Employees enjoy savings that appreciate at a higher effective rate of return because they compound gross of personal income taxes.

Because employees with qualified employer-sponsored retirement plans have tax-deferred retirement saving through their plan, the Internal Revenue Code restricts their access to another form of tax-deferred retirement saving: the Individual Retirement Account. IRAs were also established in ERISA to provide similar tax-favored saving to workers who don't have an employer-sponsored pension plan. Of course, IRAs do not

provide identical benefits, because the contribution limit for them is much lower than for employer-sponsored plans. Workers without a workplace retirement plan may deduct their contributions to IRAs, but workers who are covered by a qualified plan cannot deduct their contributions unless they are in the lowest marginal tax bracket. Covered workers may still contribute and enjoy tax-deferred compounding of gains on IRA investments, but since they can already shield some income from taxes under their employer's ERISA-compliant plan, the IRC prevents them from doing so again through an IRA.

Ironically, military personnel are treated as if their retirement plan complies with ERISA, when in fact it deviates markedly from the minimum standards. Thus, a service member who separates prior to 20 years of service receives no retirement benefits from the military, but has been denied the opportunity to deduct his IRA contributions for much of his military career.

Bringing military retirement into full compliance with ERISA is one way to mitigate the general inequity of the existing system and eliminate the disparity of treatment and protection between military and civilian-sector retirement plans. Since the odds are against any such structural reform for the military-retirement system, the Internal Revenue Service should stop treating military personnel as if their retirement plan complies with ERISA standards, and allow all service members to deduct their contributions from taxable income as a matter of simple fairness and consistency.

Although the exact magnitude of the impact of IRAs on saving behavior is subject to debate, the author is convinced that they increase private saving. High marginal tax rates, inflation, and the taxation of nominal versus real gains discourage saving. IRAs increase saving by reducing the penalties to saving. Additionally, the immediate reward of a tax deduction encourages many people to participate in IRAs. Thus, allowing all service members to deduct their IRA contributions would increase participation in the armed forces and increase private savings in the process. The national capital stock would be

higher, and service members, particularly those who separate from the military prior to 20 years of service, would be better prepared financially for retirement.

The cost of this proposal is not prohibitive. Annual personal income tax revenue losses of $30 million annually would cause barely a ripple in the $1.6 trillion federal budget. Much of the annual cost is offset since income tax revenue increases when the contributions and gains are withdrawn from the account and rising capital stock increases corporate earnings and thus corporate income taxes. While the net tax revenue effect may not be positive during the service member's time in the military, during their lifetime IRAs will increase rather than decrease total tax revenues for the government. Since the size of the revenue gain is directly related to the length of the preretirement period, encouraging early participation in IRAs by reducing the disincentive to save will reduce government debt and increase national saving.

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APPENDIX. CHANGES TO IRAs FOR 1998

While the author was researching and writing this thesis, Congress passed the Taxpayer Relief Act of 1997 which modified the rules governing IRA participation and eligibility. One set of changes modified the structure of the existing IRA, and another set created a new type of IRA.

Changes to the existing IRA take effect in 1998. The new law increases the income phase-out range for workers with an employer-sponsored retirement plan. The increase will occur in steps from 1998 to 2007. By 2005, the adjusted gross income (AGI) phase-out range for unmarried filers will increase to $50,000 to $60,000, and by 2007 the AGI phase-out range for married taxpayers increases to $80,000 to $100,000. Below these ranges, taxpayers may make fully deductible contributions. Taxpayers with AGIs within the range can make partially-deductible contributions, and taxpayers above the AGI range can make nondeductible contributions only. This change will reduce the personal income tax revenue loss caused by the proposal to allow all service members to deduct their IRAs, regardless of income. As the phase-out range increases, the number of service members who are ineligible for deductible contributions decreases, thus reducing the cost of allowing the remaining ineligible service members to deduct their contributions. Eventually though, nominal wage growth will raise the income of more service members above the increased phase-out ranges and fewer service members will be eligible to deduct their contributions without the adoption of the proposal.

The change to the contribution-deductibility limit strengthens the argument for the proposal. The equity argument for extending universal IRA deductibility is unaffected, but the cost of the proposal is reduced because fewer people will be affected by it. The higher AGI limits mean fewer new contributors will deduct their contributions under the proposal, and thus the differential personal income tax revenue loss will be smaller.

In addition to raising the AGI limits for the current IRA, Congress added a new type of account, called the Roth IRA, which has the following features:

- Contributions are nondeductible, but earnings accrue tax free, and no taxes are paid on gains at withdrawal. There is no penalty on withdrawals prior to age 59½ if the contributions remain in the account for five years and the money is used for college expenses or a first-time home purchase (up to $10,000).

- The total IRA contribution limit remains $2,000. Taxpayers can have both a conventional IRA and a Roth IRA, but the combined contributions to both cannot exceed $2,000 in any year.

- Eligibility phases out between $95,000 and $110,000 for unmarried taxpayers and between $150,000 and $160,000 for married filers.

- Unlike the current IRA, there is no requirement to begin withdrawing assets from the account after age 70½.

- Amounts equal to the nondeductible contributions can be withdrawn at any time without penalty.

- Balances in existing IRAs can be transferred to a Roth IRA if AGI is below $100,000. Taxes are due on any gains or deductible contributions, but if the transfer is made prior to January 1, 1999, the tax burden can be spread out over four years.

Roth IRAs also have no effect on the equity argument, but they would also reduce the cost of the proposal. To the extent that some service members select Roth IRAs, fewer personnel will make deductible contributions to conventional IRAs, thus reducing the personal income tax revenue loss. The Roth IRA may raise current tax revenues and

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reduce total tax revenues relative to traditional IRAs, but this Appendix will not explore that possibility.

Additionally, Congress created a tax-deferred saving account for education expenses which has been labeled an "Education IRA," but this is a misnomer, since the account has nothing to do with retirement saving.

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